

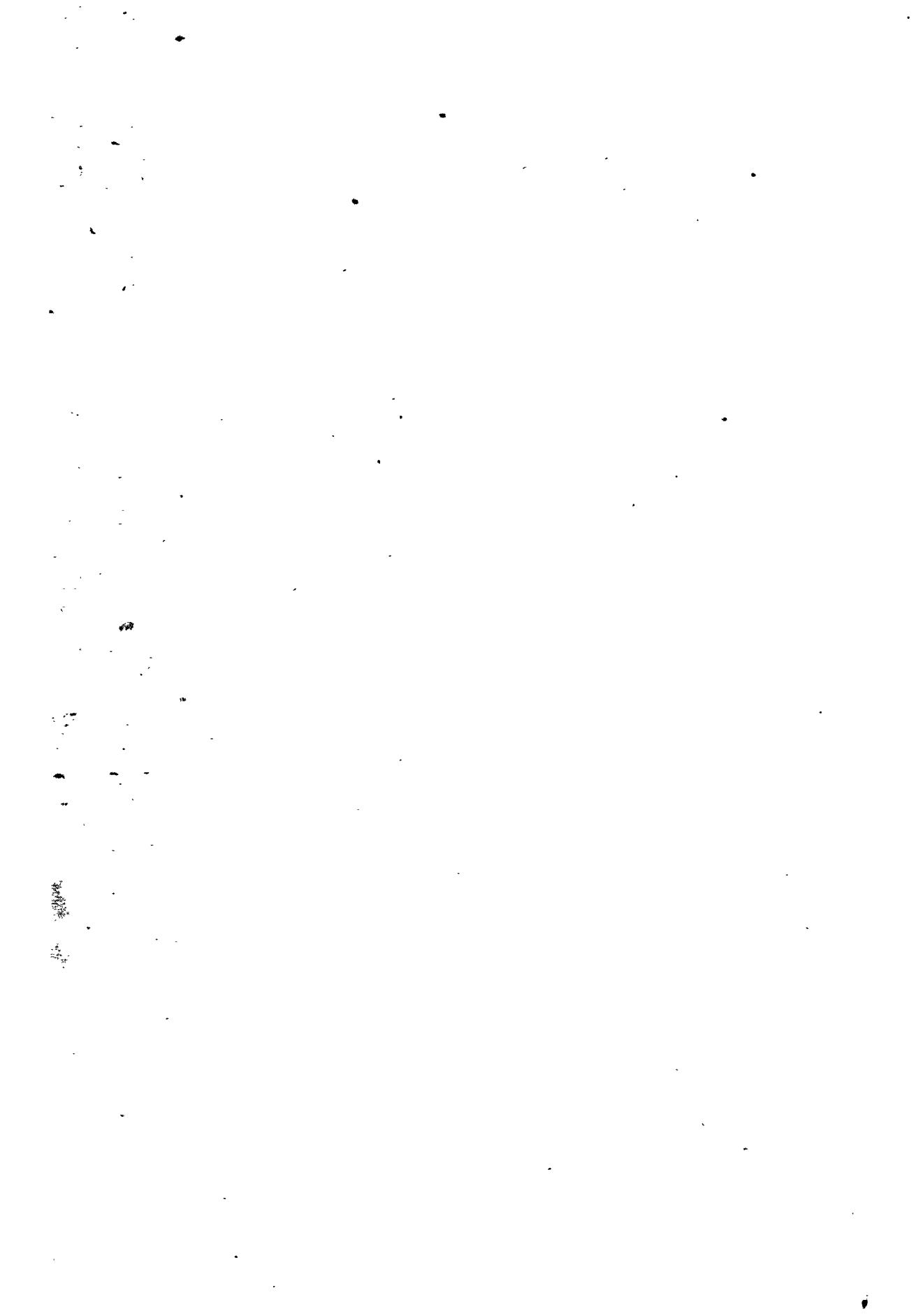
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THE JOURNAL
OF THE
ROYAL ANTHROPOLOGICAL INSTITUTE

OF
1886
GREAT BRITAIN AND IRELAND.



VOL. LI.

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NOTICE.

For convenience of reference, all volumes of the new (imperial octavo) series which began in 1898 are numbered in continuation of the old demy octavo series, Vols. I-XXVII. Thus Vol. I of the imperial octavo series=Vol. XXVIII of the old series ; and the present Vol. LI corresponds to N.S. Vol XXIV.

The Index to the present volume includes an index to the Institute's monthly publication MAN for the year of issue 1921.

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JOURNAL

OF THE

ROYAL ANTHROPOLOGICAL INSTITUTE OF GREAT BRITAIN AND IRELAND.

MINUTES OF THE ANNUAL GENERAL MEETING,
TUESDAY, JANUARY 25TH, 1921, AT THE ROOMS OF THE INSTITUTE,
50, GREAT RUSSELL STREET, W.C.

Owing to the absence, through illness, of the President, Sir EVERARD IM THURN, the Chair was taken by Prof. F. G. PARSONS, F.R.C.S., Vice-President.

The Minutes of the last Annual General Meeting were read and accepted.

The CHAIRMAN appointed Mr. GARFITT and Mr. HAMBLY as Scrutineers and declared the ballot open.

The HONORARY SECRETARY read the Annual Report of the Council for 1920, and on the motion of Miss DURHAM, seconded by Prof. PARSONS, this was accepted.

In the absence of the TREASURER, the HON. SECRETARY read the Treasurer's report. On the motion of Dr. RIVERS, seconded by Mr. PEAKE, this was accepted. The CHAIRMAN expressed his regret at the absence of the President, and then read the President's Address, "The Thoughts of South Sea Islanders."

On the motion of Mr. CARVETH READ, seconded by Dr. RIVERS, it was resolved unanimously that a request be conveyed to the President to allow his Address to be printed in the Institute's *Journal*.

The SCRUTINEERS then handed in their report and the following were declared to be duly elected as Officers and Council for 1921-2.

President.—W. H. R. Rivers, M.A., M.D., F.R.S.

Vice-Presidents.

Sir J. G. Frazer, D.C.L., LL.D., Litt.D., F.R.S.		S. H. Ray, M.A. Prof. F. G. Parsons, F.R.C.S.
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Hon. Secretary.—E. N. Fallaize, B.A.

Hon. Treasurer.—R. W. Williamson, M.Sc.

Hon. Editor.—H. S. Harrison, D.Sc.

Council.

H. G. Beasley.	E. A. Parkyn, M.A.
H. J. Braunholtz, M.A.	H. J. E. Peake.
L. C. G. Clarke.	W. P. Pycraft, A.L.S.
Miss M. E. Durham.	Carveth Read, M.A.
Prof. H. J. Fleure, D.Sc.	Prof. C. G. Seligman, M.D., F.R.S.
Capt. A. W. F. Fuller.	F. C. Shrubsall, M.A., M.D.
Capt. T. A. Joyce, M.A., O.B.E.	H. S. Stannus, M.D.
H. G. A. Leveson, M.R.A.S., F.R.G.S.	E. Torday.
Capt. E. W. Martindell, M.A.	Prof. W. Wright, M.B., D.Sc., F.R.C.S., F.S.A.
Miss M. A. Murray.	
C. S. Myers, M.A., M.D.	

The Institute then adjourned.

REPORT OF THE COUNCIL FOR THE YEAR 1920.

NOTWITHSTANDING adverse conditions arising out of unavoidable increase in expenditure, the Institute during the year 1920 has made substantial progress towards complete resumption of its pre-war activities. The *Journal* has been enlarged, the number of evening meetings has been increased, and additions have

been made to the library by purchase in order to fill some of the gaps in our works of reference. There has been a satisfactory increase in the number of Fellows during the year.

The statistics of membership are as follows :—

—		Total Jan. 1st, 1920.	Loss by death or resignation.	Since elected.	Total Jan. 1st, 1921.
Honorary Fellows	... ...	39	2	—	37
Local Correspondents	... ...	20			20
<i>Deduct Ordinary Fellows</i>	... ...	2	—	1	2
Affiliated Societies	... ...	— 18 3	1 —	—	— 18 3
Ordinary Fellows :—					
Compounding	... ...	63	2	3	64
Subscribing	... ...	397	21	41	417
Total Membership	... ...	520			539

It will be seen that the total net increase in the number of Fellows is nineteen, the net increase in Ordinary Fellows being twenty.

The losses which the Institute has suffered by death are as follows :—Dr. Ridolfo Livi (elected 1889, Obituary Notice appeared in *Man*, 1920, 68); Mr. H. C. Collyer (elected 1888); Mr. F. J. Bennett (elected 1912); Mr. W. Churchill (elected 1912); Prof. F. del Paso y Troncoso (elected 1898); Dr. R. Munro (elected 1885, Obituary Notice appeared in *Man*, 1920, 74); Prof. A. M. Paterson (elected 1891); Mr. A. L. Lewis (elected 1866, Obituary Notice appeared in *Man*, 1920, 91); Rev. H. H. Winwood (elected 1869).

The Council would wish to place on record its great appreciation of the services rendered to the Institute by the late Mr. Lewis, one of the original founders, and Treasurer from 1886 to 1904.

MEETINGS.

Twelve meetings (ten ordinary, two special) have been held, as against ten in 1919 and three in 1918. Of the twelve communications submitted, seven dealt with ethnological subjects, three with archæological subjects, and two with physical anthropology. Exhibitions of specimens took place on three occasions. In addition the Huxley Lecture was delivered by Dr. A. C. Haddon, F.R.S., at a meeting held in the rooms of the Royal Society, Burlington House, and a joint meeting with the Prehistoric Society of East Anglia was held in the rooms of the Geological Society, when a paper was read by Prof. Arthur Keith, F.R.S.

PUBLICATIONS.

During the year, two half-yearly parts of the *Journal* have been published—Vol. XLIX, Part 2, and Vol. L, Part 1. Of the former 115 copies and of the latter 97 copies have been sold. These figures compare favourably with those of the preceding issues at the corresponding period last year (91 and 101 respectively), and further improvement may be expected, as, owing to delay by the printers in delivery of the second half-yearly part, the sales are not yet complete.

The usual twelve monthly parts of *Man* have been issued. There has been an increase in the amount received in annual subscriptions, but the office sales, unfortunately, have not maintained the improvement shown last year.

LIBRARY.

The accessions number 233, of which 138 are bound volumes.

The exchange list has been increased by nine publications, one English, two Indian, and six foreign.

RESEARCH COMMITTEES.

The work of the Research Committees has been continued throughout the year. The Megalithic Committee has drawn up a schedule of megalithic monuments for the use of observers (see *Man*, 1920, 44). Investigations have been carried out on the site of the Axe Factory at Penmaenmawr by the Graig Lwyd Committee (*Man*, 1920, 21). Representative collections of the specimens obtained will be presented to the British and other Museums.

CONJOINT BOARD OF SCIENTIFIC SOCIETIES.

Dr. C. G. Seligman and Dr. C. S. Myers have acted as representatives of the Council on the Conjoint Board of Scientific Societies. The sum of £5 was contributed towards the funds of the Board in 1920.

HONOURS CONFERRED ON FELLOWS OF THE INSTITUTE.

The Council desires to offer its congratulations to Dr. L. R. Farnell, who has been elected Vice-Chancellor of the University of Oxford; to the Abbé Breuil and to Sir J. G. Frazer, upon whom the University of Cambridge has conferred the degree of Doctor of Letters; and to Dr. Zammit, upon whom the University of Oxford has conferred the degree of Doctor of Letters.

HOUSING.

Premises adapted to the Institute's requirements have been brought to the notice of the officers on several occasions during the year, but financial difficulties prevented any further steps being taken. An appeal for a Housing Fund, issued to the Fellows, has produced very disappointing results.

MACKIE ETHNOLOGICAL EXPEDITION TO EAST AFRICA.

The Rev. J. Roscoe returned to this country from East Africa in November last. It is hoped to arrange that Fellows may have an opportunity to hear Mr. Roscoe's account of the results of the expedition at an early date.

JUBILEE OF THE INSTITUTE.

The Anthropological Institute was founded in 1871, when two pre-existing Societies, the Ethnological Society and the Anthropological Society, were amalgamated. The first meeting was held on February 4th, 1871. The Council proposes to celebrate the completion of the fiftieth year of the Institute's existence in some appropriate manner, of which Fellows will be advised later.

CONCLUSION.

The claims of anthropological studies as an essential preliminary in constructive social legislation and in administration have been frequently urged, and are becoming more widely recognized, both in this country and in our dominions and dependencies. In education the anthropological standpoint is being adopted in an increasing degree in all branches of study which deal with man and with human activities, while the intelligent interest of the general public in the subject is growing rapidly. In these circumstances the aim of the Council is to secure the full utilization of the facilities afforded by the Institute as a centre for the collection and co-ordination of the results of research and their dissemination, and as an advisory body for those who wish to consult the expert, whether they are dealing with the physique and mentality of our own population, or that of the backward races of the Empire. To attain this end it is essential that a high standard should be maintained both in the communications presented at the meetings of the Institute and in its publications ; that the library should be well arranged and enlarged extensively by the addition of books which have been carefully selected ; and that the Institute should have adequate and suitable accommodation. Of these, the last is probably at the moment the most urgent ; for it is only by securing more convenient quarters that there is any probability of obtaining that increase in membership which will provide the financial resources necessary to enable the Institute to carry on its work in a manner which will ensure its full official recognition as the appropriate place of reference in questions related to the study of man.

TREASURER'S REPORT FOR THE YEAR 1920.

The Revenue for the year 1920 has been £1,532 11s. 1d., and the Expenditure £1,693 9s. 4d.; so there has been a deficiency for the year of £160 18s. 3d., which may be compared with 1919, when there was a surplus of £242 2s. 7d., a difference between the two years of about £400.

The following is a comparative table of some of the more prominent or interesting items to which this great difference must be attributed, shillings and pence being omitted:—

	1919.		1920.	
	Receipts.	Payments.	Receipts.	Payments.
Subscriptions	£ 836	£ —	£ 931	£ —
<i>Journal</i>	202	298	215	594
<i>Man</i>	219	311	222	380
Dividends and interest	139	—	156	—
Three years' income tax returned ...	46	—	—	—
Rent	—	177	—	201
Stamps and parcels	—	62	—	87
Library	—	9	—	51
Totals	1,442	857	1,524	1,313
Excess of receipts over payments (as regards these items only) ...	585		211	

Difference, £374.

In subscriptions the year 1920 had the benefit of three life payments. If these were excluded from the calculation, the results for the two years would be about the same.

The main source of difference between the two years has been the *Journal*, the net cost of which in 1919 was £96, whilst in 1920 it was £379. This great difference is to be attributed in the main to the adoption in 1920 of the policy, foreshadowed in the Council's report for 1919, of enlarging the *Journal*, utilizing some of the surplus of 1919 to enable it to do so; but the additional cost has been increased by a further rise during the year of the expense of printing.

A reduction in the size of *Man*, as compared with that of pre-war times, being impracticable, the expense of its production has been influenced to the full extent of the increases from time to time in the cost of printing. It is hoped that the increases from 6s. to 10s. for Fellows, and from 10s. to £1 for non-Fellows, which have now been made to the prices for which *Man* is being sold, will go some way towards mitigating the evil.

I do not know whether any further increase in the cost of publication is likely to occur, but there seems to be no sign of a probable decrease, so this question is likely to remain as a continuing difficulty.

ROBERT W. WILLIAMSON,
Hon. Treasurer.

ROYAL ANTHROPOLOGICAL INSTITUTE
ACCOUNTS FOR

	PAYMENTS.	REVENUE	
		£ s. d.	£ s. d.
RENT		201 9 0	
" JOURNAL "		594 4 8	
" MAN "	387 5 10		
Less contribution to cost of plates	6 10 0		
		<hr/>	<hr/>
SALARIES		380 15 10	
HOUSEKEEPING		195 13 3	
ADVERTISING		28 6 5	
STAMPS AND PARCELS		12 10 9	
TELEPHONE AND TELEGRAMS		87 16 3	
PRINTING AND STATIONERY		7 5 6	
COAL, GAS AND ELECTRIC LIGHT		54 10 9	
EPIDIASCOPE		17 8 3	
INSURANCE—		6 16 6	
Fire	5 0 0		
Employers' Liability	0 13 7		
		<hr/>	<hr/>
SUBSCRIPTIONS TO OTHER SOCIETIES, DIRECTORIES, ETC.		5 13 7	
BRITISH ASSOCIATION SUBSCRIPTION		9 15 6	
CONJOINT BOARD OF SCIENTIFIC SOCIETIES (CONTRIBUTION).....		1 0 0	
LONDON ASSOCIATION FOR PROTECTION OF TRADE		5 0 0	
" HUXLEY LECTURE " (ENGRAVING MEDAL)		2 7 0	
AUDITORS' FEE		1 1 0	
LAW COSTS		3 3 0	
TYPEWRITER		5 6 4	
TRAVELLING		2 19 3	
REPAIRING STOVE		1 1 10	
BANK CHARGES		0 17 6	
SUNDRIES		1 7 4	
TRANSFER TO LIBRARY ACCOUNT		15 1 3	
Balance, 31st December, 1920	51 18 7		
		<hr/>	<hr/>
		337 7 10	
		<hr/>	<hr/>
		£2,030 17 2	
		<hr/>	<hr/>
LIBRARY			
BOOKS AND BINDING		£ s. d.	
		51 18 7	
		<hr/>	<hr/>
HOUSING			
BALANCE, 31st December, 1920		£ s. d.	
		103 14 0	
		<hr/>	<hr/>
GRAIG LWYD			
PAYMENTS MADE TO THE COMMITTEE		£ s. d.	
		90 9 9	
		<hr/>	<hr/>
		£90 9 9	

OF GREAT BRITAIN AND IRELAND.

THE YEAR 1920.

ACCOUNT.

	RECEIPTS.	£ s. d.	£ s. d.
BALANCE, 1st January, 1920			498 6 1
SUBSCRIPTIONS :—			
Current	746 9 5		
Arrears	54 11 0		
Advance	35 16 0		
Life	94 10 0		
		—	931 6 5
SALE OF "JOURNAL"		215 15 8	
SALE OF "MAN"		222 4 5	
SALE OF "HUXLEY LECTURE"		2 14 0	
ADVERTISING		2 1 10	
DIVIDENDS	115 18 2		
,, (AMERICAN DOLLAR BONDS)	40 10 3		
		—	156 8 5
REPAYMENT FOR INSTRUMENT PROVIDED LAST YEAR.....		1 18 9	
SUNDRIES		0 1 7	

£2.030 17 2

ACCOUNT.

TRANSFER FROM REVENUE ACCOUNT	£ s. d.
	51 18 7

FUND ACCOUNT.

DONATIONS RECEIVED (INCLUDING BANK INTEREST)	£ s. d.
	103 14 0

COMMITTEE'S ACCOUNT.

DONATIONS RECEIVED	£ s. d.
BALANCE, 31st December, 1920	88 2 0
	2 7 9
	—
	£90 9 9

Treasurer's Report for the year 1920.

CAPITAL ACCOUNT.						
	£	s.	d.	£	s.	d.
DECREASE IN VALUE OF £886 BURMA RAILWAY STOCK:						
Valued 31st December, 1919, at 111	983	9	2			
Now valued at 96	850	11	2			
	132	18	0			
DECREASE IN VALUE OF £300 METROPOLITAN CONSOLIDATED 3½ PER CENT. STOCK :						
Valued 31st December, 1919, at 82	246	0	0			
Now valued at 80	240	0	0			
	5,338	6	0			
Balance 31st December, 1920				£5,476	19	6
BALANCE SHEET.						
	£	s.	d.	£	s.	d.
Amount due for Anthropological Notes and Queries on 1st January, 1920	11	8	3			
Further sums received during the year	17	12	0			
Total outside Liabilities		29	0	3		
Receipts held in suspense :						
Deposit received from a Fellow on a borrowed book	3	5	0			
Received towards cost of illustrations in Journal in 1921	35	0	0			
	38	5	0			
Balances of previous Accounts :						
Revenue Account	337	7	10			
Housing Fund Account	103	14	0			
Capital Account	5,338	1	6			
	5,779	3	4			
Less Graig Lwyd Account	2	7	9			
	5,776	15	7			
BALANCE BROUGHT FORWARD 1ST JANUARY, 1920	30	16	0			
INCREASE IN VALUE OF SUBSCRIPTIONS IN ARREAR : Now valued at	28	15	10			
Valued 31st December, 1919, at				2	0	2
	£	s.	d.	£	s.	d.
	3	493	6	0		
	200	0	0			
	850	11	2			
	240	0	0			
	147	10	0			
	500	0	0			
	30	16	0			
	103	4	11			
	3	9	5			
	99	15	6			

Treasurer's Report for the year 1920.

Cash in Bank :						
Current Account	180	5	2			
Less Outstanding cheque	1	17	0			
	<hr/>					
Housing Fund Account	111	1	0	178	8	2
Less Sum credited in error	7	7	0	<hr/>		
	<hr/>					
	103	14	0	103	14	0
	<hr/>			<hr/>		
	282	2	2	282	2	2
	<hr/>			<hr/>		
	<hr/>			<hr/>		
	£5,844	0	10	£5,844	0	10
	<hr/>			<hr/>		

ROBERT W. WILLIAMSON, *Hon. Treasurer.*

We have examined the Accounts of the Royal Anthropological Institute and have obtained all the information and explanations we have required. In our opinion the Balance Sheet at 31st December, 1920, is properly drawn up so as to exhibit a true and correct view of the state of the Institute's affairs according to the best of our information and as shown by the books of the Institute.

JACKSON, PIXLEY & Co.,

CHARTERED ACCOUNTANTS,

Auditors.

58, Coleman Street, E.C.
21st January, 1921.

PRESIDENTIAL ADDRESS.

ON THE THOUGHTS OF SOUTH SEA ISLANDERS.

By SIR EVERARD F. IM THURN, K.C.M.G., K.B.E., C.B.

IN 1905, while cruising among the Solomon Islands, in H.M.S. "Torch," we put in to a little-visited inlet in Marau Sound, in the island of Guadalcanar, and next morning, having borrowed one of the ship's smaller boats, I with my A.D.C. pushed our way up various creeks and backwaters. On rounding a small mangrove-covered point, we came unexpectedly upon a native village the surprised inhabitants of which were evidently passing the time in their ordinary avocation and in ignorance of the fact that white strangers were in the neighbourhood.

The picture I then saw has impressed itself strongly on my memory. In the foreground, three or four young men, each clad only in a scanty loin-cloth of some vegetable fibre, a large pearl-shell, on which was inlaid the figure of a frigate-bird, by way of breastplate, and an elaborate and fantastic comb-like head-dress, were fishing with lines from a rock which jutted out into the water; in the middle distance an old man, even less clothed or at least less ornamented, was strolling backward and forward, apparently jeering at the smallness and fewness of the young men's catch. Meanwhile, perhaps as a demonstration of his own superior industry, he continually turned a rudely pointed cone-shaped flint in a ring-shaped fragment of shell, which he was evidently fashioning into a child's armlet; behind the old man were several of the usual neatly-thatched Solomon Island houses—at the doors of which hung festoons of the bones of larger fish than those which at the moment were affording sport to the fishermen, and quite in the background was the forest, there not very high, edged with a few coconut palms and a tangled growth of other food-plants.

Our arrival inevitably broke up the peaceful primitive scene. The fisher lads and the armlet-maker gathered round us, each still carrying the implements with which he had been lazily toying; and two or three women shyly peeped out at us from the house-doors.

The half-finished armlet, with the flint implement with which it was made, are now in the Museum at Oxford. One at least of the fish-hooks which the lads brought

up with them from the waterside is here on the table, and it is to this to which I want especially to draw your attention at this moment.

This fish-hook, beautifully fashioned from a small fragment of mother-of-pearl, extraordinarily delicately carved into the semblance of a very tiny fish, the pectoral fin of which makes as wicked a barb as ever struck into the mouth of a real fish.

It seemed hard to realize that these so-called "savages" were capable of the play of fancy and the artistic skill to make for their daily use this exquisite little jewel of a hook; and but for my previous long experience of the ways of "wild folk" (*i.e.*, people of a culture entirely different from our own), I might have been tempted to think that this really beautiful thing had been devised and made after contact with what we are pleased to think of as our own higher culture.

But note what Abel Jansz Tasman, or those who were with him, saw as long ago as the 21st of January, A.D. 1643, in a part of the Great Ocean far distant from the Solomon Islands, when, during the first visit of any Europeans to the South West Pacific, an island was discovered which Tasman called "Amsterdam," which is Tonga Tabu, the principal island of the group which the next European visitor to those parts, Captain James Cook, one hundred and thirty years after Tasman, called "the Friendly Islands."

Tasman's Journal states¹ :—

"In the morning we had a calm, we had the southernmost island east by south of us at about five miles distance; we shaped our course for the northernmost island . . . and sailed to the north-west side of the island, where we dropped anchor in 25 fathoms, coral bottom. . . . These two islands are nearly south-east and north-west of each other; we could see between them, where there was a passage about 1½ mile in width. The one to the south-east was the highest, the northernmost one being a low-lying island, much like Holland. To the northernmost we gave the name of Amsterdam, because of the abundance of the refreshments that we got there, and the southernmost we christened Middelburgh.² About noon a small prow with three men in it put off from land, and came near our ship; these men were naked, of a brown colour and slightly above the ordinary stature; two of them had long, thick hair on their heads, the third wore his close cut, they had only their privities covered with a curious small bit of cloth; their prow was a very narrow one, covered in to a good distance in front and abaft; their paddles were of ordinary length, with blades broad in the middle; they called out to us several times, to which we responded in the same way, but we could not understand each other. We showed them some white linen, throwing overboard a piece upwards of 1½ fathoms

¹ The quotation is from the Amsterdam (1898) facsimile edition of the Journal, and from page 26 of the translation which in that edition is appended to the "Journal or Description drawn up by Abel Jansz Tasman of the Discovery of the Unknown Southland in 1642."

² *i.e.*, Eua.—E. im T.

in length, which they seeing paddled towards it, but as it had sunk to a considerable depth under the water, the foremost man in the prow jumped out and dived for it. He remained under water for a very long time, but at last reappeared with the linen, and got into the prow again, where he put it several times atop of his head, in sign of gratitude. They then gradually approached us with their prow, upon which we threw out to them a piece of wood to which we had fastened two large nails ; we then handed out to them a small Chinese looking-glass with a string of Chinese beads, which they drew up into their prow by means of a long stick, to which they tied one of their fish-hooks with a small fishing line, which they handed up to us to show their gratitude. This fish-hook was made of mother-of-pearl, and shaped like a small anchovy."

Tasman's further account of this earliest meeting of Europeans and Tongans is full of interest, but is too long to be quoted in this place. It may, however, be added that the intercourse was throughout of a friendly nature, even though, after a time, "as they were leaving the cabin, one of the natives was caught in the act of stealing the captain's pistol and a pair of slippers." Tasman here adds, "we took these articles from him again without showing the least dissatisfaction." The friendliness, or at least the entire absence of any evidence of hostility on the part of the natives, at these first meetings is a thing to be noted.

But at the moment we are here chiefly concerned with the fish-hook "shaped like an anchovy." Evidently the remarkable development of artistic skill indicated by these little hooks was indigenous and was not confined to one part of the Pacific ; indeed, they have been met with in a large number of widely scattered islands, and it is at least equally clear that this particular artistic development is not modern, nor has it been in any way influenced by Europeans.

This little fish-hook has here been used to illustrate the high degree of culture in matters of handicraft to which the South Sea "savages" had attained, quite apart from any subsequent European influences ; and it is here possible only to add that it is only one—and a comparatively unimportant one—of countless other things, useful and many of them beautiful, which the South Sea Islanders invented for their own use, before the appearance among them of white men. Perhaps the most remarkable and most useful of these native inventions, in the South Seas, is the *taua* or bark-cloth which was their only, and under their then circumstances quite sufficient, clothing before the introduction of textiles from the western world.

Similarly, it would be quite possible, did time permit, to show in matters of social organization, and even in what for want of a better word I may call "philosophy," the South Sea "savage" had advanced—though on lines entirely divergent from those along which our own race has moved—to a state sufficient for his prosperity and welfare under the conditions of his life before he came in contact with what may be called the civilized world.

(I would here guard myself by some reference to the views now being more and more brought forward by certain leading anthropologists, that some, or even many, of the peculiar and remarkable manifestations in artistic work and in social organization which have from time to time been noted, with wonder, in the Pacific are relics of culture introduced into those parts at unknown but certainly long distant and prehistoric periods by immigrants from other and often very distant parts of the world. Until further evidence is produced (and it may be that will be at no very distant date) it seems to me unwise either to accept or reject these theories. But in any case it would seem that these foreign influences must have entered the Pacific, if at all, at a period before civilization, as distinct from culture, had spread far over the greater part of the world, and by folk who, however high their state of culture, had not attained to the state of civilization, using that term in the sense which I shall presently try to explain.)

It seems desirable here to explain the sense in which the terms "culture" and "civilization" are here used, also the sense of the not unconnected term "savagery" as it has been applied to such folk as the South Sea Islanders.

By "culture" is here meant the development of the mental, and consequently of the active, faculties which began with the first advance of the human, *i.e.*, rational, animal from the purely animal ancestral stage. It follows that all men—in that they are men—have some degree of culture, and that this culture, once it has begun, never ceases, however devious may be the path it follows.

Now, in one or more parts of the world, a new thought has, in some way, arisen in certain necessarily already cultured minds, with the result that thereafter, in the people affected by this new idea, the prime motive of human action should be the good of others, or of one's whole race, rather than the good of oneself. Without wasting time on the fruitless consideration of how far this high standard of motive has been or could be universally maintained, I merely say that, as I think, this new conception which has been called by many names, but which by anthropologists may perhaps be most aptly called "altruism," is that which makes all the difference between mere culture and civilization—or civilized culture.

If this is so the relation of so-called "savagery" to culture and civilization becomes obvious.

It is perhaps hardly necessary again to say that "savagery," in the sense in which that word has been applied to the state in which the South Sea Islanders were first seen, does not mean "fierceness." In reality it means no more than "wildness" or "uncontrolledness." In short, these Islanders, when first seen, had developed for themselves a certain degree—in many cases a very high degree—of culture; they were "wild" or "uncontrolled" in that they had not been subjected to the influence of "civilization."

In further elucidation of the matter let me give you two quotations, from very different sources and written at very different times.

Southey, in his *History of Brazil*, published in 1810¹, had written : “ The religion, the pride and the joy of the Brazilian savages ” (he classes them all as “ savages ”) “ were in their cannibal feasts ; and it was the more difficult to abolish the custom because the Europeans had hitherto made no attempt to check it among their allies.” His reviewer in the *Quarterly Review*², probably Sir John Barrow, writes, in the same year, “ Of these nations, the Tupinambas were the most advanced in civilization, and seem to have been nearly on a level with the islanders of Feejee—the most cruel but the most ingenious of the great family of the Pacific.”

This was written but little after the time when, owing to the English and French voyages to explore the South Seas, the first real contact with the Islanders had been established, and when the London Missionary Society, in consequence of the fearsome reports which the first Europeans to visit and return from the South Western Pacific spread abroad, had sent out its first cargo of missionaries, to tackle the stupendous task of Christianizing, and incidentally of civilizing, the South Sea “ savages.”

The second quotation—which I give with all due reverence for the words of the great Master of the modern science of anthropology—is from Sir E. B. Tylor’s *Anthropology* (p. 13) :—

“ Next we have to look at culture or civilization. . . . Human life may be roughly classified into three great stages, Savage, Barbaric, Civilized, which may be defined as follows : The lowest, or *savage* state is that in which man subsists on wild plants and animals, neither tilling the soil nor domesticating creatures for food. Savages may dwell in tropical forests where the abundant fruit and game may allow small clans to live in one spot and find a living all the year round, while in barer and colder regions they have to lead a wandering life in quest of wild food, which they soon exhaust in any place. In making their rude implements, the materials used by savages are what they find ready to hand, such as wood, stone and bone, but they cannot extract metal from the ore, and therefore belong to the Stone Age. Men may be considered to have risen into the next, or *barbaric* state, when they take to agriculture. With the certain supply of food which can be stored till the next harvest, settled village and town life is established, with immense results in the improvement of arts, knowledge, manners and government. Pastoral tribes are to be reckoned in the barbaric stage, for though their life of shifting camp from pasture to pasture may prevent settled habitation and agriculture, they have from their herds a constant supply of milk and meat. Some barbaric nations have not come beyond using stone implements, but most have risen into the Metal Age. Lastly, *civilized* life may be taken as beginning with the art of writing, which by recounting history, law, knowledge, and religion for the service of ages to come, binds together the past and future in an unbroken chain of moral

¹ P. 217, Part I.

² Vol. iv, p. 464.

and intellectual progress. This classification of three great stages of culture is practically convenient, and has the advantage of not describing imaginary states of society, but such as are actually known to exist. So far as evidence goes, it seems that civilization has actually grown up in the world through these three stages."

In both quotations—the one from a great traveller and competent man of letters, but of a period long before anthropology was thought of seriously as a science, and the other from one who was very largely responsible for the early organization of that still young science—the use of the words "savage," "culture" and "civilization" affords food for reflection.

Leaving aside, for the moment, Sir Edward Tylor's dicta, the *Quarterly Reviewer's* conception of the "savagery" of the South Sea Islanders—which was, after all, typical of that of all "westerners" till recently—was founded on the "travellers' tales" which had filtered back to Europe from the comparatively few sailors, missionaries, and traders who had up till then adventured into those almost inconceivably remote and inaccessible regions where the so-called "savages" were at home.

Probably the misrepresentation of these primitive folk by those who went in to them from the west and the east was not intentional, but was due to the impossibility of two sets of people, with such entirely different histories and of such entirely different mentality, understanding each other; and the mistake, thus natural enough in the first instance, became more and more difficult to correct as time went on and the two schools of thought came more and more into contact, generally violent contact, mixing but not mingling. Nowadays, no doubt, the mutual understanding of the two contestants is much better, though this is, however, partly due to the stronger side having suppressed without extinguishing the weaker. Even now it is very doubtful whether there are, or have been, many of recent "savage" origin who have attained to more than a glimmering idea of the true character of the man of civilized race; and it seems to me equally safe to say that there are not too many civilized men who have attained to a real knowledge of the mentality of the "savage."

One of the greatest practical tasks of the anthropologist is constantly to strive to improve this mutual understanding, and to apply such knowledge as is gained in this way for the common benefit of civilized and the recently "savage" race wherever they come in contact.

It is difficult to form a vivid conception of what the native folk of any isolated South Sea island or group of such islands thought about the white men who first appeared among them. It is obviously almost impossible that there should be any uninitiated record of these thoughts. It is therefore necessary, as a preliminary step, to try to realize what was the view such folk took of the world outside themselves.

It was a very small world that they knew, limited, or almost limited, by the horizon (*wailangilala*, “water-sky-nothingness” the Fijians call it) which they saw from the island or cluster of islets on which they lived. But they knew that there was something of unknown, or rather of unquestionable, extent way beyond *wailangilala*, for in some cases they had heard, and believed, that some of their kindred had come, very long ago—when they neither knew nor cared—from somewhere beyond; in other cases they had seen some of their own folk pass, in one way or another, into that unknown place beyond; and indeed in their own cases, each knew that he had himself (*i.e.*, in his dreams) passed beyond *wailangilala* but had returned to the world which he knew when awake.

That vaguely known place which lay outside the *wailangilala*, enclosing the small world in which these island-folk knew, or thought they knew, thoroughly, was without bound or limit; and what they saw there, during their occasional dream visits, was generally more or less fantastically like what they were accustomed to see in their own island-home, except that in the places beyond they sometimes met, without surprise, one or another of the forefathers whom they had never themselves seen but of whom they had heard, from “the old men,” as having more or less long before been in the island-world in which they themselves still lived.

Similarly, no idea or question had arisen in the minds of these island-folk as to any limit to the duration of life, nor any thought of the unchangeableness of the physical form in which any one life might manifest itself.

Each of these self-cultured folk must have felt that he himself existed; and he knew, as he thought by experience, that both in the small island-world in which he was when awake and in that more vaguely known but indefinitely larger place which he sometimes visited in his dreams, were a great but unknown number of beings which acted or might act upon him in one way or another, beneficially or harmfully, and these seemed to him to be embodied in forms which they might change, possibly at their own will, sometimes acting from bodies more or less man-like, and therefore similar to himself, sometimes from bodies of what we should call those of the lower animals, sometimes from forms as of trees or stones, sometimes as of winds (*i.e.*, as something unseen but strongly felt), and sometimes even from something as to which it was still more difficult for him to detect whence the influence, which he imagined to be acting upon him, came.

And these seen and unseen hosts, all equally real to him, were also, as far as he knew, undying. He knew not—perhaps often cared not—whence they came or where they went; they might disappear for a longer or shorter period from his ken but might yet reappear at any time to him, and might so reappear either in the form in which he had before known them or in some new and often quite unexpected form.

The world in which the South Sea Islander lived was indeed, according to our notions, a very uncanny one; and even to them, accustomed as they were to their

strange surroundings, it must often have been very puzzling to know how to behave towards any kind of being manifesting itself for the first time. Naturally under such circumstances the rule of conduct which they had instinctively adopted was, among themselves, for each individual to get as much as he could from others, and when strange beings came to treat these in the same way, but only after ascertaining whether they themselves or the newcomers were the more powerful.

Such, as far as I can tell, were the Islanders when Europeans, strange beings with an entirely novel kind of skin, hair, clothing, tools and ships, language and ideas, came into sight from the unknown world which the Islanders, in their dreams only, had seen beyond *wailangilala*.

It is not so difficult to realize the conception which men of civilized race took of these self-cultured but uncivilized Islanders at first sight. If the native failed at the first to accept the white-skinned visitor as being the same kind of animal as himself, the white man, on his side, looked down on the native as a quite inferior being, as a strange wild beast, to be used, to be tamed and petted, or to be killed, as it might be convenient and safest.

Tasman's account of the earliest European interview with the Tongans has already been quoted. He describes them hardly otherwise than he might a strange new kind of animal he had come across. The reference to the fish-hook, to the bark-cloth (*tapa*) and other things suffice to show that even by that time the Tongans were a cultured people.

Tasman's visit was in 1643. But twenty-seven years earlier, Le Maire and Schouten, somewhere off the Horne Islands, on meeting out at sea a beautifully built and ornamented vessel, found nothing better to do than to fire off their big guns at the wild men who manned the strange craft.

But perhaps the worst kind of unfeeling inhumanity towards the Islanders—though it may have been due to thoughtlessness rather than to anything worse—is to be found in the action of the crew of Roggewein's vessels (1721) in cutting down the coconut-trees of certain Islanders.

These instances, a few among many similar which might be quoted, all took place during the earlier stage of exploration of the Pacific, during which the circumnavigator's and other European ships only passed by the islands, without as a rule attempting to enter into intercourse with the Islanders. Again and again those who tell the story of these voyages relate that as they passed such and such an island the beaches were seen to be lined with natives armed with spears or other weapons and evidently with hostile intent. Had the boats been sent ashore it would probably more often than not have been found that the natives were only following their custom of never going about unarmed. It must have been during this same period that the reputation for fierceness, together with the name of "savages," was attributed to these folk. The French happening about the same time to use the term

“silvestres” or “wild men” of these same folk, the two designations got confused, and a false reputation was thereby affixed to the Islanders.

The second stage in the exploration of the Pacific only began towards the end of the eighteenth century, when the voyages of Captain Cook and his contemporaries were soon followed by the beginning of real intercourse with the natives and by the settlement of white men among them—more or less permanently. Concurrently, the London Missionary Society placed its earliest representatives in several of the islands; and these—all praise and honour to them—tried, with the very best intentions and not without some success, to superimpose their own highly and long elaborated systems on natives who were entirely unprepared. Still, indifferent as the characters of some of the lay settlers may have been, and ill-judged as some of the efforts of the missionaries may have been, the intercourse which from that time grew up between Europeans and the Islanders served the useful purpose of showing that the last-named were not fierce “savages” (however much the name might cling to them), but were a highly self-cultured, and in many cases a courteous and even hospitable people.

It is important for my purpose here to notice the condition of the natives, and their bearing toward the white men who were in one way or another stranded on the islands, in the early part of the period with which I am now dealing. This might be illustrated from the well-known stories of Captain Cook’s voyages, or from the story of the wreck of the “Port au Prince” on one of the Hapaa Islands (to the north of Tonga Tabu) and the detention there of William Mariner and others of the crew of that ill-fated vessel, or from many another similar but less accessible record. But it seems preferable to use for the purpose the hitherto unpublished story of William Lockerby, who was in the Fiji Islands for a year or two in connection with the sandalwood trade, which for a brief period quite at the beginning of the last century attracted many a ship to Mbua Bay in the island which we now call Vanua Levu, but which at that period was known as “Sandalwood Island” or “Pau.”

The sandalwood trade in Fiji dates from the wreck of the “Argo,” in January, 1800, on an outlying reef (Mbukatatahoa—since called “the Argo reef”) at the extreme east of the Fiji group. The village folk of a small island not far from the site of the wreck—who had never before seen a white man—found at daybreak that January morning that some strange beings had during the night appeared on an outlying rock close to the village, and on investigation it appeared that these strange new animals must have come from a great canoe which was lying piled up on Mbukatatahoa. Despite the natives’ wonder at this phenomenon so entirely new to them, they entertained the newcomers hospitably, after their fashion, and there is absolutely nothing to indicate that any of the wrecked men were ill-treated by the natives, though the sailors must of course have suffered great privations during their enforced stay on those then unknown islands. What became of most of them is unknown; but one of their number, after living for twenty-two months among, and evidently

on friendly terms with, the natives, was rescued by a passing ship. This man, Oliver Slater by name, reached the "New Settlement in New South Wales" and later on got to Manilla, in both of which places he spread the report of the sandalwood which he had seen used, for personal adornment, by the Fiji Islanders.

Sandalwood at that time was much in demand for the China market, and the supply, till then obtained from the East Indies, was quite insufficient for the demand. Slater's tale excited the interest of all who were at that time beginning to trade across the Pacific, and as a consequence, from 1804 to 1813, "Sandalwood Bay in the Feegee Islands" became the resort of a great many ships of various nationalities, in quest of so profitable a commodity. In 1804, Slater himself, who had established friendly relations with the natives, and spoke their language, left Manilla in the first of these ships, the "Fair American," as guide, but at Port Jackson he transferred his services to the "Marcia," which was also bound to the Fijis for sandalwood.

Among the ships which thus resorted to Mbua or Sandalwood Bay, in 1807, was the American ship "Jenny," Captain Dorr, and on this ship an Englishman, William Lockerby, went as supercargo. He quarrelled with the captain, and was marooned, with some other members of the crew, at Mbua. For some months the marooned men were the only Europeans at Mbua, during which period Lockerby established relations of the most friendly kind with the whole native community, living practically as the adopted son of the ruling Chief (whom he calls the "King of Mbua"), taking part, as one of themselves, in the daily life of the well-organized community, and becoming an eye-witness of many of their customs (such as cannibalism and widow-strangling) which shocked, but at the same time interested him.

When the season of bad weather was over, ships again came to Sandalwood Bay, and Lockerby made himself very useful to the masters of these, acting as a sort of agent and getting together cargoes of the precious wood from his now friendly natives. During this period he travelled much in the ships' boats up and down the northern coast of the great island on which Mbua was situated. Eventually he left Fiji in one of the ships sailing with a cargo to China.

Lockerby was a fairly educated man and a quite competent witness as to the many phases of native life which he saw in Fiji. He has fortunately left a somewhat detailed record of what he actually saw, and this record, I hope, with the assistance of its present owner (a descendant of Lockerby), to publish before long—this would have been done before now, but for the war.

Meanwhile, I may quote two passages from Lockerby's Journal. The first, referring to the time immediately after the "Jenny" had sailed away, leaving Lockerby stranded in Fiji, is as follows : "I went next day to visit the old King of Nyemboo (*i.e.*, Mbua). By this time I spoke the language in a tolerable manner. I told him my misfortune. . He received me more like a father than an uncultured savage, he said that I must stay with him ; he took me to his house, gave me some breadfruit, but would not allow me to feed myself, it being contrary to the custom

of the principal chiefs, who always have one to feed them, and this I was obliged to submit to all the time I was with them. I found the greatest difficulty in drinking in this manner, the drink is commonly served in a green plantain leaf, and was poured into my mouth, not being permitted to touch the leaf with my lips or hands. This island is called by the natives Tocen Roba.¹ . . . On this island there are four persons who call themselves Kings. The one under whose protection I lived, was considered the most powerful ; being able to bring into the field three thousand men. The population of the whole island might be twelve thousand. Besides these four Kings there are a great number of petty chiefs, who have districts allotted to them, and have a fort or place of defence in each, but still considered as subjects and under control of one or other of the four Kings. The lower class of the people is under complete subjection to the different chiefs, particularly to the Kings. If one of them should chance to meet him, he passes him in a bending posture, at the same time repeating a few words, which manifest his obedience ; he nevertheless would rather go half a mile out of the way to avoid meeting him. The King's wife has respect shown to her by other women ; in short, there is a similarity of deference demanded and paid by the inferiors to their superiors to that of more polished nations, but in their own way, far more particularly attended to. In time of peace they live as neighbours in greatest harmony together ; in wars they are most inveterate enemies. They eat no human flesh except that of the prisoners they take in battle, and for this they take more credit to themselves than for merely killing them. The first nine months I lived among them I saw no human flesh eaten. During that period their conduct towards me and their general character, as much as I could observe of it, made me consider them in a quite different light than that of cannibals." Of the women, Lockerby writes : "Should their husbands die before them, custom obliges them to submit to be strangled and put with them into the same grave ; this they do with the greatest alacrity, and should the man have ten wives at his death, all must suffer and be buried with him."

Again, of the time when he was leaving the islands for ever, he writes :—" Before I sailed I went to the Bay of Nyemboo to see my good old friend Baumbawallou, and I carried him some presents. He was greatly disappointed when I told him that in a short time I was going to leave him. On leaving the village the last time, a number of old men and women followed me down to the boat, bringing some yams, coconuts and plantains, indeed more than the boats I had with me could carry. When I left they could not have shown greater signs of regret at parting with one of their own people. . . . The witnessing of this parting scene would have made anyone forget for the moment that they were cannibals. For myself I do assure those who may read this, that notwithstanding the strong motives I had to make me wish to be away, I could not help feeling considerable pain on parting with them. From

¹ 'Tocen Roba,' i.e., Thakaundrove, the name now confined to one district of the Island of Vanua Leva.

the good old King I had received kindnesses which I should remember while I live with gratitude. Left, as I was on his island without the least means of subsistence, to the mercy of the lower class of the natives who might have plundered me of the few articles I had left, and even deprived me of life, he not only supplied me with food when there was a great scarcity all over the island, and granted me his protection from the insults of his people, but he taught me by his advice how to acquire their goodwill."

Lockerby quitted Fiji in 1809. His visit had been at just about the time when the sandalwood trade, which lasted in Fiji for but a very short time, was at its height. The trees, which grew, as far as was then known, only within a very limited area, were soon exhausted ; and the chiefs—especially Lockerby's 'King of Mbua'—found it more and more difficult to collect the wood for the many ships which came and more and more importunately demanded cargo. The ships' captains got impatient, thinking that it was the fault of the chiefs that there was delay and difficulty in getting what they wanted ; and, instead of trying to maintain the friendly relations which those who had come before them had used, resorted to forcible means. The crisis came in 1813, when Captain Robson, of the East Indiaman "Hunter"—of which Peter Dillon, afterwards Chevalier Dillon, was supercargo—made an armed attack on the natives of the coast along which Lockerby had traded. This resulted in a general scuffle and regrettable loss of life on both sides. After that, as far as I have been able to ascertain, only two or three ships visited Fiji for sandalwood, and even these obtained no satisfactory supply of wood. It may be interesting here to note that in connection with one of these last sandalwood ships to visit Fiji, Oliver Slater, who chanced to have been the real originator of the trade, and had ever since maintained good relations with the natives, was killed by them in 1816 in a scuffle on Makongai Island.

Thereafter, in shipping gazettes and similar publications, there appeared frequent warnings that the Fiji natives were of too fierce and savage character to be approached except with the greatest caution. Kotzebue (*Voyage . . . in 1815-18*, Vol. 3, p. 257), writes : "Captain Dorr (with the 'Jenny' from Boston) touched at Guahan (Guam) in 1808, after having taken in a cargo of sanders-wood in the Fidji islands. He praised . . . the kind and hospitable reception he had met with from the natives. In 1812 he made the same voyage in another ship. On his return he told . . . how hostilely he had been received this time, and that he had lost a mate and four sailors. The natives told him that in the course of time they had become acquainted with the whites, and had resolved to show no mercy to them." But even before this the sandalwood trade had passed from Fiji to other islands of the Pacific.

Finally, my conclusions are that the Islanders were, when Europeans first went among them, not a savage, *i.e.*, a fierce race, but were a highly cultured, if self-cultured, people but entirely uncivilized ; that they were at first puzzled what to

make of the civilized, or quasi-civilized, people who went among them ; and that they only became repellent when they were habitually injured by their visitors.

Of the inter-relations of natives and Europeans in later years—since the Islander has been forced into submission to the stronger civilized man—I can here only say that the European has a hard task before him in ruling the native justly and wisely, but that the task is the lighter inasmuch as the civilized man tries to understand the ways of thought of the natives and remembers that, except in a few cases of specially enlightened individuals, the native in his heart of hearts thinks much as his native ancestors thought before him—and this although he has been content, or almost content, to take upon him a veneer of an alien habit of thought.

FROM BIRTH TO DEATH IN THE GILBERT ISLANDS.

By ARTHUR GRIMBLE.

THE primitive observances to be described in this paper are now no longer living things. The semi-civilized young barbarian of to-day cares nothing for the ancient rituals, while the old folk who still remember dare not practise them in the face of a jeering pseudo-Christian majority. It must always be a matter for regret that none of the earlier European residents used his chance of recording the old manners and customs of the Gilbert Islands ere their decay was too complete. A few explorers and scientists, of whom the first was Commodore Wilkes in the early 'forties of last century, have from time to time taken notes in the Group, but all were handicapped by the fugitive nature of their passages and by ignorance of the native tongue; many of their accounts are inexact, Wilkes himself having been gravely misled by a wretched interpreter picked up on one of the islands.¹

Pity it is that to one so ill-qualified as the writer should have fallen the privileged opportunity of living among the people, learning their language, and piecing together the fragmentary accounts they gave of things as they used to be. There are many and grave blanks in the record, for the facts were collected by one entirely unskilled in the methods of ethnography, yet so far as it goes the account may be relied upon as a correct statement of facts, for every piece of information given has been attested to, on the island of its origin, by old men and women already in the *ka-a-roro*, which is to say, *the fourth generation back*; the witnesses were therefore either great-grandmothers or great-grandfathers, who had seen the ceremonies of which they talked. Where possible, they were chosen as informants on account of some reputed skill they had possessed, long ago, in the ordering of the rites they described.

The most convenient arrangement of our subject is under the consecutive heads—Marriage, Birth, Education, Death.

¹ For general information on the Gilbert Group see:—

Wilkes: *Narrative of the United States Exploring Expedition*, 1845.

Woodford: "The Gilbert Islands." *Journ. Roy. Geog. Soc.*, 1895.

Turner: *Samoa a Hundred Years Ago and Long Before*, pp. 293–304.

Hartzler: *Les Iles Blanches des Mers du Sud*. Vic et Amat, Paris, 1900.

Kraemer: *Hawaii, Ostmikronesien, Samoa*. Strecker and Schröeder, Stuttgart, 1904.

Sir Basil Thomson's work, *The Fijians*, contains a number of exceedingly well-informed notes on Gilbertese habits, which are worthy of careful attention.

MARRIAGE (*Te Iein*).*Kinship.*

Sir Basil Thomson has written in his book on Fiji that descendants of brother and sister in the Gilbert Islands are forbidden to marry so long as their common origin is remembered, except on Abemama and Makin, where the rule is only violated by high chiefs.¹ This may have been the theory, though I have never heard it so expressed ; the practice has long been otherwise. According to such a standard, local marriages would quickly become impossible on these small islands, where a population of 2000 is well over the average ; and in this connection it must be remembered that local marriages are, and always have been, infinitely preferred by the natives.

No detailed analysis of Gilbertese family relationship is to be given here ; it is sufficient for our present purpose to summarize the rules relating to consanguinity.

A native was forbidden to marry—

- (a) Lineal kin ;
- (b) All descendants of a common ancestor, on male or female side, out of his or her own generation ;
- (c) Descendants of a common ancestor in his or her own generation, to the second degree of cousinship.

Adoptive relationships and those of the half blood were counted the same as those of the full blood. The native catchword concerning the marriage of kinsfolk was, and is, “*E ewe te ka-a-roro*,” i.e., *the fourth generation goes free* ; thus if three generations separated each of the parties to a marriage from the common ancestor, no ban of consanguinity rested upon them. Several such unions have taken place within my own experience in the Group ; nevertheless, they were not regarded with any great favour by the old people of the respective families, who considered that, in the ideal state, collaterals should await the fifth generation before coming together. But a study of the island genealogies shows that third cousins could marry at least five centuries ago ; for twenty generations back, on a Beru record which I possess, is shown the union of a certain ancestress named Tonga-Biri with her kinsman Kekeia, both of these persons having had the same great-great-grandfather.

Incest.

Incest was punished on Tamana and Arorae by laying the offenders face down in a shallow pool of water and suffocating them ; in the Northern Gilberts the culprits were lashed to a log of wood and set adrift in the ocean ; the lightest punishment awarded seems to have been to put the incestuous couple aboard a small canoe, with a few coco-nuts, a paddle but no sail, and thus abandon them to the elements. The belief was that the sun would hide his face from the place in which two such offenders were allowed to live unpunished. This superstition is connected with the story of a

¹ Cf. *The Fijians*, B. Thomson, p. 191.

great culture-hero named Bue, some of whose deeds were exactly similar to those of Polynesian Maaui. Bue, on his return from a wondrous voyage into the east, lay with his sister under the noonday sky ; the sun (Gilbertese, *Taai*), their ancestor, seeing their act, was filled with rage and destroyed their craft ; only the possession of a magic staff saved them from drowning. Ever since that day the sun has set his curse on incest, and in deference to him all offenders must be punished with the watery death that he would have visited upon Bue and his sister.

The Marrying Age.

The age at which a male Gilbertese married lay somewhere between 25 and 28 years. The actual date of a young man's marriage depended upon the length of time it took him to pass through his initiation into full manhood, while the inception of that initiation depended again on his physical development. A healthy, lusty boy might begin younger than a weakling, but as a rule it was not muscular development that was watched so much as the growth of axillary and pectoral hairs. When these were well in evidence, and not before, the lad was considered ripe enough to be *kaunaki*, i.e., *made into a warrior* (lit. *made angry*) ; this, among a people by no means given to great hairiness, would not normally be until he was 23 or 24 years old. Taking his age to be 23 at the beginning of the initiation period, we must allow a minimum of three years for the completion of the various rites he must undergo ; reason for this will be seen later on under the heading "Education," where the ceremonies are described. The youth of 23 would thus be a man of 26 before he qualified for the title of *Roro-buaka*, or Warrior, and the right to take a wife.

A girl would be given in marriage on her release from the *Ko* (*Bleaching-house*, of which a description will appear in its place), wherein she was confined, as a rule, for about two years after the first menses appeared. Her age would thus normally be about 14 or 15 years at marriage.

Polygamy.

On islands where the chiefly system prevailed, which is to say, on all the units of the Gilbert Group north of and including Abemama, only a chief might take more than one wife. Slaves were at the most monogamous, and sometimes the poor creatures can hardly be said to have married at all, for they appear to have been brought together and separated like cattle, for breeding purposes, entirely at their masters' discretion. There was, of course, no sort of ceremonial used at the marriage of slaves, and all that is to follow applies only to the freemen of the democratic south or to the chiefs and landowning bourgeoisie of the aristocratic north.

Strictly speaking, a man had only one true wife in a lifetime, who was distinguished from the rest of his harem by the title *Rao-ni-kie*, signifying *Companion of the sleeping mat*. With her alone he underwent the marriage ceremony soon to be described. None of his other womenfolk were ceremonially married to him ; they

were of two orders—*Nikira-n-roro* or Concubines, and *Taua-ni-kai*, which may be translated Concubitants.

The *Nikira-n-roro* were chosen promiscuously, for mere beauty, at the lust of the houselord. They were only to be found in the households of high chiefs, such as that of Tem Binoka of Abemama, so fully described by Stevenson; their status in the harem was regulated by favour, not right of custom.

The *Taua-ni-kai* accrued by customary right; they belonged to either one of two classes of women marked out as a man's potential, though not necessarily actual, concubitants. These were:—

(a) *The widows of his deceased brother*, who passed into his care by a custom akin to, if not quite identical with, the Hebrew Levirate. They might be more precisely termed *contingent concubitants*, as they would become *Taua-ni-kai* to a brother-in-law only if their own houselord died.

(b) *The uterine sisters of his wife*¹, who became his potential concubitants as soon as he married their sister.

In the Gilbert Islands it was considered unworthy for a man to exercise his physical rights over the persons of all his potential concubitants, the relationship being esteemed as a means of guaranteeing him against childlessness primarily, and secondarily of providing for surplus female population. Nevertheless, all *Taua-ni-kai* were theoretically at the disposition of their houselord, and any infidelity on their part was an adultery against him. He might elect to give one of his wife's sisters intact to a friend, in which case, as a virgin, she would have the right to become the ceremonial bride of her husband. Hence a curious result, for as *Rao-ni-kie* she would carry to her husband the right of *Taua-ni-kai* (a name applying equally to the relationship and to the persons subject thereto) over all her uterine sisters, one of whom was married, while she herself could never be free of the obligations of *Taua-ni-kai* to her sister's husband. Thus two men might share the same rights over a single group of women, the wife of each being the concubitant of the other, and upon this was established the system of *bita-ni-kie*, *changing of mats*, or *wife-exchange*, so common in the Group.

The issue of the *Rao-ni-kie* would take precedence over the children of *Taua-ni-kai* in whatever order they were born, but if the wife died barren her sisters' children would inherit the paternal lands.

The concubitant relationship of a man with his brother's wives and his wife's sisters appears to be identical with that recognized in Fiji, but here the resemblance between the two systems ends. Fijian marriage is, with certain exceptions, based upon the concubitancy of alternate generations, i.e., of cousins german; the Gilbertese, while far from severe in matters of consanguinity as judged by the Samoan standard, is nevertheless distinctly Polynesian in its general character.

¹ Sometimes also, if his wife had no uterine sisters, her nearest female kin of the same generation; but this appears to have been a matter of arrangement, not inalienable right.

Betrothal.

Children might be betrothed at a very early age, sometimes before birth. Two-friends not yet married would sometimes make a compact that if they should ever beget children of opposite sex, they should marry one another. When the girl-child whose fate had thus been arranged was born, she was taken by the parents of the prospective husband and brought up by them.

But most often marriages were arranged by the negotiation called *te mata-mata*, *the envisagement*. When a father saw that his son was likely to become a strong and healthy man (*maiū*, meaning *full of life*, is the Gilbertese term), he would send his own or his wife's brother to the father of the girl desired in betrothal. This envoy would broach the subject and sometimes, but not always, leave a small present of food behind ; on his departure the girl's parents would take a few days to decide upon the proposal. If they decided against it, a message to that effect would be despatched and no offence taken on its receipt.

But if they regarded the match with favour, they would send one of their brothers to invite the boy's parents to visit them. As soon as possible after receipt of this invitation the couple would pay their call, and on arrival would be taken by their hosts to the land that was intended as the bride's marriage portion. On their return home it was their turn to consider. If the marriage portion did not satisfy them they would acquaint the girl's parents with their opinion, and this might lead to a perfectly peaceful breaking off of negotiations.

If, however, all seemed satisfactory, the boy's parents would send their brother to bring the girl to their house, where she would remain sometimes for a number of years until the time was ripe for her marriage. The act of transferring her from household to household was called, somewhat ungallantly, *te iaaki*, which means *the gathering-up-of-rubbish*.

The envisagement stage was now complete and the definite link of *kainro*, or *betrothal*, established between the boy and girl. This could only be dissolved by common consent of the contracting parties ; if one desired to do so without consulting the other, it must be prepared to pay for the privilege by the forfeit of a large piece of land, though in some cases the fine might be reduced to a seagoing canoe with sail, bailer and steering-oar complete.

Marriage Ceremonies.

On the islands of Nikunau and Beru there was very often no betrothal and no marriage ceremony, a wife being simply appropriated and carried off by her suitor ; this existed side by side with the more formal institutions dealt with and to be discussed. The nature of the practice, its difference from that in usual vogue, and its reminiscence of the habits of exogamous peoples, seem to indicate the presence on these two islands of a racial strain either foreign to, or submerged by, the other.

islanders. There are distinct indications in the traditions of many families that a small Melanesian invasion struck Beru about A.D. 1325 (as reckoned by the genealogies) and resulted in the settlement of the central part of the island by a black-skinned, man-eating folk, who eventually intermarried with the autochthones. Again, it is provable that Nikunau, which lies only 28 miles east of Beru, was dominated at a very early date by settlers from the latter island. Lastly, among the inhabitants of both islands to this day are to be seen types which more nearly approach the Melanesian than any other in the Group. It seems not unwisely venturesome to infer that the ancestors responsible for the exceptional types were also responsible for the exceptional marriage by rape.

On Arorae Island marriages were often made without preliminary betrothal, by a fictitious fishing ceremony, which has been described as follows by Turner:—“In choosing a husband the lady sat in the lower room of the house, and over her head were let down through the chinks of the floor of the upper room two or three coco-nut leaflets, the ends of which were held by her lovers. She pulled at one, and asked whose it was. If the reply was not in the *voice* of the young man she wished to have, she left it and pulled at another leaf, and another, until she found him, and then pulled it right down. The happy man whose leaf she pulled down sat still while the others slunk away. The young couple then retired to their respective homes and prepared for a day of feasting, which was to be the marriage day as well. The ceremony of the union was performed by the father of either party. The two bowed their heads before him. He took hold of their hair with one hand, and with the other poured out upon them a purifying libation of the juice of the coco-nut palm.” This account has been corroborated to me by old people of Arorae in all its details save two; first, the purifying libation of the juice of the coco-nut palm was, as a matter of fact, an anointment with coco-nut oil, which was made for the purpose by the mother of the bridegroom; secondly, fishing lines were more often used than coco-nut leaflets to catch the wayward bride, and to these lines were bent hooks of pearl shell especially made for the occasion.

On the island of Nonouti the same ceremony was in vogue under a slightly modified form. There the lovers, instead of fishing from a loft, stood outside the girl’s house and introduced their lines through chinks in the screen of coco-nut leaves which hung around it. This practice, with the lines not vertically suspended but horizontally stretched, was a closer imitation than that used on Arorae of the trolling method of fishing for which pearl shell hooks were manufactured. The fishing fiction itself was possibly a reminiscence of the old migration days of the race, when warriors swarmed from group to group without their wives and, by marrying strange women overseas, might literally have been said to catch their mates from the ocean.

But the ceremony described by Turner was not the only one in use on Arorae or Nonouti. Far more generally known on those islands and throughout all other

Gilbert speaking communities was the practice which will now be described, and which must be understood as the sequel to the *mata-mata* betrothal above discussed.

A house for the reception of the bridal pair was first built on the land of the bridegroom's father, by the boy's kinsmen. From the outside this house looked like a large thatch, of which the eaves rested on the ground and the ridge was some 14 feet high. From the inside, which was accessible through doors in the gables, the thatch was seen to be supported by corner studs of coral rock about 2 feet in height. The floor space was about 18 by 18 feet; it was shingled with small white stones and covered with mats. Overhead, there was a loft or attic, of which the floor was so low that a man could not stand upright in the lower room; this was accessible through a small square trap in the middle.

In the lower room on a given day the families of the bridal pair came together, as soon as the sun had passed his zenith. When all were present and silent, the bride was brought into the house by her mother, mother's sister, mother's mother, or adoptive mother. The girl and the old woman immediately mounted into the loft, and there the younger was stripped of all her clothing and laid upon a new sleeping mat especially woven for the occasion. Thus she was left, awaiting the arrival of her groom.

As soon as the bride was known to be ready, the boy was brought by his mother or father's sister into the lower room. Aided by pushes and encouragement from all his nearest female relations he climbed into the loft; there he stripped off his waist mat and threw it down among the waiting people. As soon as it was seen to fall the whole audience broke out into clamorous exhortation to both the young people, beseeching them to cast off coyness and quickly to consummate the union. Nevertheless, the bride's kinsfolk would have been much disappointed and ashamed had she surrendered herself without demur to the embraces of the bridegroom, for that would have denoted a lack of modesty unseemly in a well-born maiden. Without moving from her mat, it was therefore customary for her to resist the advances of her mate, and to intimate to those below that she was so doing by struggles of which the reverberation could not fail to reach them.

At the moment when her virginity left her she emitted a single piercing scream. Soon after, the bridegroom would call from above, and at that signal his mother would mount into the loft. There she would at once search for traces of blood on the girl's sleeping mat and, having found them, would cry in a loud voice, "*Te tei! Te tei!*" (*A virgin! A virgin!*) She then descended alone to exhibit the mat to all eyes, whereupon, taking up the cry of the old woman, the father and uncles of the bridegroom rubbed each a little of the virgin's blood upon his cheeks, where it would remain for the rest of the day. The mat was afterwards carefully burned in order that no enemy of the family might obtain it and, by using evil magic upon the blood, curse the bride with barrenness.

Throughout the ceremony, an old man on behalf of the bridegroom and an old woman on behalf of the bride sat under the eastern rafters of the house mumbling auspicious or protective charms ; and always before proceedings began, the girl and the boy were given philtres to drink, which were made of coco-nut milk mixed with infusions from the bark of the *ango* tree (*Premna taitensis*), and the orange-coloured petals of the *kaura* flower (*Wedelia strigulosa*). Of these ingredients, the last banished fear, the second promoted true love, and the coco-nut milk was a protection against foreign magic.

While the united families were rejoicing below, the girl and the boy dressed themselves in *riri* (kilts of coco-nut leaf) made by the bridegroom's mother's and father's sisters, anointed their bodies with oil from the same source, and girt themselves with dancing mats provided by the mother's and father's sisters of the bride. Then they descended from the loft. On their appearance a feast began which lasted for three days, and a great dance was given in which the young couple formed the *kabi* (keel), or leading pair.

On Banaba (Ocean Island) matters were rather differently arranged. A girl was married to her betrothed a few months after she reached the age of puberty, if the boy's initiation into manhood was by then complete. The test of virginity was the same as that described above, but the couple was housed in a hut while the families were assembled outside. They lay on a bed made of a single coco-nut leaf screen built up of two parts. The half on which the boy lay was made by his relations, that on which the girl reclined being made by hers. The two halves were joined together by roughly knotting the edges. When the ceremony of marriage was over, the two were obliged to live in the house until the girl was pregnant, or until it was evident that she was barren ; during this time of waiting they went entirely naked nor were they allowed to set foot outside. No sleeping mats were given them other than the wretched things of coco-nut leaf above mentioned ; these were renewed every day, and the old ones hung up under the eaves of the house to form a screen against sun and wind. The object of this Spartan treatment was to encourage the couple to beget a child quickly and so earn their freedom. When at last the girl became pregnant they were allowed to don clothes and to live in the communal dwelling of the husband's family.

If, on any island of the Gilbert Group, a girl was discovered at the marriage ceremony to have failed in the test of virginity, the bridegroom's mother, on establishing the fact, would cry aloud, “*Te kara ! Te kara !*” (*An old woman ! An old woman !*) and proceed to drag the poor naked creature from the loft. Below, the incensed families (her own in particular) would fall upon her and mercilessly beat her into the open air. On Banaba, exceptionally, she might be saved by her husband's love if she consented to disclose the name of her former lover, in which case the seducer would be made to forfeit land in expiation of his offence. But as a rule the unhappy girl was disowned from the moment of detection ; she was

branded with the name of *nikira-n-roro* (lit., the remnant-of-her-generation) and earned her living by the favour of promiscuous suitors.¹

When a young married couple had settled down, the girl entered into a special relationship with her husband's father's brothers which was known as *Tinaba*. To all these uncles-at-law she owed a particular deference, which, if duly bestowed, would be rewarded by presents of land. She must especially see to it, that at all festivities they were provided with wreaths of flowers, scented oil and dancing mats ; she must give her long tresses, if demanded, to make plaited belts with which the mats were girt about the body. And she must be prepared from time to time to deliver her person to their embraces. All this was encouraged by the husband, both on account of filial respect and on account of the additional land acquired. The man, in his turn, owed similar obligations to his wife's mother's sisters.

But from amours outside the family wives were most jealously guarded in the old days. While still young and attractive they were prohibited from appearing at any public function and might take part only in family dances. They never went out alone, being accompanied either by their husband or his mother ; if the latter was the chaperon, she carried a heavy stick with which to reward any erring glances, either of the young wife or her admirers. Often a hood of matting was affixed to the young woman's head, of which Turner has given the following account : “ It was so folded in Corean style as to leave but a small hole in front for her to see the road before her. Any man observing her coming along would get out of the way till she passed. Any deviation from the rule would lead to jealousy and its revengeful consequences.”

Divorce, unlike marriage, was effected without formalities. It might lead to the surrender of land-forfeits on one side or the other, but there was no fixed custom by which bonds were dissolved or penalties assessed. For a man to put away his wife he had simply to eject her from his house ; equally well a woman might dissolve the partnership by returning to her parents, who, if there seemed good cause, would harbour her and take her part in any unpleasantness that might ensue. The right to decide in such a matter was thus accorded as freely to the wife as to the husband, and this is a fair indication of a woman's general status in the Group, where mother right and father right seem to have impinged upon one another and eventually come to a compromise.

On every divorced woman was pronounced the charm called *te anaa-ni-bung*, by which she was protected against the evil magic of her late husband's family, and at the same time absolved from her duty of concubitancy to him. During the recitation of the charm by her mother or aunt, her father gave her to drink a potion of salt water and coco-nut oil ; this acted as an emetic, after the effect of which

¹ Wilkes mentions that women were offered in traffic to his sailors by the people of Tabiteua and other islands, and deduces that the islanders had a low standard of morality. The fact was that the girls offered were *nikira-n-roro*, whose existence argues a high standard of virginity.

she was considered purged from all past associations with her husband, and capable of being loved by some other man.

BIRTH (*Te Bung*).

If it appeared that a wife was likely to prove barren, efforts were made to remedy the defect. Only a few old women on each island appear to have had any knowledge of the art required ; there are some still practising their skill on the islands of Nonouti and Tarawa, but I have found it impossible to elicit information from those I have questioned. The method used was internal and external manipulation of the uterus ; all operations were performed with the patient standing up to the waist in water on some lagoon shoal.

When a woman was known to be pregnant, the greatest care was taken to conceal her condition from all outsiders. For as long as possible the secret was shared only by the few people with whom she came into daily contact, for both she and the child within her were considered peculiarly liable to magic that dealt death (*wawi* and *wauna*) and magic that brought sickness (*maniwairaa*). Remnants of her food, toilet materials, old clothes, and all other things closely connected with her person were burned as soon as might be, for through such things some foreign sorcerer might most easily bring evil upon her.

Certain foods were forbidden her at this period. For the very sufficient reasons given she might not eat any of the following :—

The flat fish called *te baibai*, because, having both eyes on one side of the head, it would similarly distort the eyes of the child ;

Turtle flesh, because it would cause the child to crawl like a turtle and to grow up a coward ;

Garfish, because if the mother ate it and the expected were a son, he would never grow a beard ;

Crayfish, because it would cause the infant's eyebrows to stand on end ;

Porpoise flesh, because it would give the child bad teeth ;

The great molluse Tridacna, because it caused baldness. Finally, no expectant mother must eat the remnants of any fish that had been used for bait, for her child's limbs would thereby be twisted and its heart would become lecherous.

Of all the foods that she was allowed to eat, the land crab was most highly prized, as it was said to ensure a good supply of milk. Much fish was given her, and she was made to drink a good deal of coco-nut milk, though other vegetable foods were avoided.

From the moment that her motherhood was known the wife lay apart from her husband under the care of her mother¹, who came to stay with her ; it was at such a time that the *taua-ni-kai* played the part of wife to the husband.

¹ Or mother's sister, or husband's mother, etc. The husband's female kin were often preferred, as they were considered more reliable sponsors for the general conduct of the wife.

The fifth month of pregnancy was considered to be the most dangerous of all to mother and child. When it arrived she was taken to the eastern shore of the island, where a small clearing in the bush had been prepared, and as she sat there a girdle of the inner bark of the *kanawa* tree (? *Cordia subcordata*) was bound about her middle. This was called her *bunna*, or protection against enemy magic, but incidentally it played the part of an abdominal support that helped her to bear the increasing weight of her child. The ceremony during which it was adjusted was called *te ere-mao*—*the cutting of the mao-bush* (*Scævola Koenigii*), not because that plant played any part in the scheme, but because the clearing of any area on the eastern side of an island would entail the cutting of the ubiquitous *mao*.

At the beginning of the seventh month the two kinswomen, who were to confine the mother, came and lived with her. If none of her family had the requisite skill, friends might be called in and heavily paid in land and food for their services. One of these old women was called *te tia-kabung*, *the deliverer*, and the other *te tia-tobi*, *the midwife*. Both paid constant attention during the last two months of pregnancy to the position of the child in the uterus, and if it seemed at any time unsatisfactory it was adjusted by extremely skilful massage. I have heard a competent medical authority speak in praise of the methods of these old experts, whose art is not yet quite extinct in the less visited islands of the Group.

When labour (*te ariri*) began the patient was given to drink a decoction of the bark, leaves and flowers of a shrub called *te i-nato*, which is rather like a privet in appearance. This was supposed to promote a swift birth. The old woman known as the deliverer then sat down at the north end of the house facing south. Crossing her legs tailorwise first of all, with the left on top, she thrust her right foot a little forward keeping the knee on the floor, so that the foot was “on edge” with its toes pointing straight ahead. On this foot, her back to the deliverer, sat the patient, the bony articulation of the great toe affording a perineal support. The deliverer then clasped her about the body from behind and pressed firmly downwards with the fingers of both hands upon the uterus. In this position they sat awaiting the birth of the child, the *tia-tobi* or midwife sitting in front of them. If the labour was protracted the patient was given repeated draughts of the *i-nato* decoction.

Shortly before presentation a small clean mat was laid before the mother, and when the child was born it was laid thereon, face upwards, with feet towards the patient. The umbilical cord was not severed before the placenta was born, the belief being that the loose end would otherwise recede into the mother.

The cord was measured for severance up to the child's forehead; the father of the child was called in to perform the operation, which he did with a shell-headed adze. For a girl a chopping-block of stone was used and there was no ceremony. If the child was a boy, the cord was cut upon the haft of a lance that had been used in battle, and the act was ceremoniously completed to the accompaniment of an incantation, in which the ancestral god of the family was invoked, the boy's name

named, and courage promised him by his father. This charm was a mixture of prayer and blessing, the name of the child forming the link between the two ; it was the only baptism, to the best of my knowledge, used in the Group.

I must admit to negligence in not having found out how the infant's navel was attended to during the next few days,¹ for this was considered a most important part of the body, on the beauty of which depended success in the dance and in love-making.

All the debris of confinement was burned the same day or night as a precaution against enemy magic ; the mother was anointed with oil and given water to drink as soon as she could stand, which was usually a few minutes after all was over, and she proceeded at once to the lagoon side alone to wash in salt water. For the next three days both she and her offspring must remain in that part of the house (north end) where the child had been born ; there it was said to be passing its appointed time in the *uma-n-anti*, *house of spirits*, protected by the female spirit Aibong, whose home was on the northern horizon. During those three days a huge bonfire was kept alight close up against the eastern side of the house, and the united families of the child's mother and father danced in the open about it ; this observance was called *kaura-n-te-ai*, *the reddening of the fire*, and was conceived to encourage the soul (*taamnei*) of the child to take up its abode in the little body. I have often asked why the fire should be lit on the eastern side of the house, and have invariably received the answer, "Because the light of day comes from the east," but no further explanation is obtainable ; it would seem probable that the observance is a fragment of some rite connected with an ancient sun-worship.

On the fourth day the infant was removed to another house, which had been prepared to receive it ; it was said then to have "gone over into the house of men" (*tobo nakon uma-n aomata*). All clothes, mats and other objects that had hitherto come into contact with its body were burned, and a complete new outfit provided. Mother and child were decked out in costume, and were now ready to receive visitors belonging to the family ; no outsiders were allowed near. Every caller was expected to bring some small present for his (or her) majesty the baby, which was called *te karea*, *the gift*, and generally consisted of an article of clothing or toilet ; to have paid a first call without some such offering would have been an insult to the child.

A nursing mother lay apart from her husband until her baby was weaned, which took place about eighteen months after birth. She was carefully protected from all sun-rays.

EDUCATION.

Under this rather loose title will be considered the chief of those observances counted necessary in preparing a man for war and a maid for marriage. The sexes will be separately dealt with.

¹ But see B. Thomson's *Fijians*, p. 211.

Boys.

From the moment of weaning, a boy was regarded as a potential warrior, and from first to last the ceremonies which he underwent were performed with that idea predominating. At about two years his hair was cut for the first time, being sawn through close to the scalp with the edge of a large shark's tooth while the ends were grasped in the father's hand. During the operation (which was performed by father, father's brother or father's father), a charm was recited many times over, by which the infant's heart was hardened against the love of women. Only the closest male relatives of the boy were present at this *kabaka-ira* (*haircutting*), as it was called. The hair was burned in a small fire on the eastern side of the house by him who had cut it, the child being held by one of the other assistants in close proximity to the flames; a second charm was recited, again with the object of protecting him from the wiles of the other sex, for all communication with women before ritual should have made him fit for marriage was considered liable to make a coward of him.

After this, until about his fifth year, he remained much in the company of his mother, and might play with little girls of his own age, for as yet he was not *wana-wana*, or *reasonable*. But at five he was taken by his father and, after being washed with fresh water in a bowl of wood (*te kumete*) as a sign that his infancy was done, he was set apart from his mother and sisters, forbidden the fellowship of all girls of his age, and obliged to sleep thereafter only beside boys and men.

During the next three years the little boy was allowed to eat as much as he could get or, as the natives say, "to carry a well-rounded stomach." But at about eight his diet began to be strictly regulated, though not so much in kind as in quantity. He was now approaching the age at which betrothal was usually arranged, and a girl's parents would not look favourably upon him if he were fat and sluggish; he was therefore put on very meagre fare, and from that time onwards helped his father in all hard manual exercise that food-getting by sea and land entailed. Before he was ripe for the next ceremonies to be undergone, a period of fifteen years would have to elapse, and in the meantime we must imagine him absorbing all that the various members of his family cared to teach him of their skill in dancing and the art of composing chants, in fishing and canoe building, in the use of dagger, lance and the throwing-stick, in the craft of the housebuilder, and in endless other useful things that a native must know. All these accomplishments had their attendant magic, allied to simple forms of ritual, for nothing of importance was done, or thought, or said, or, as it would appear, even dreamed, without a preliminary charm. As the boy accumulated practical skill he must therefore keep abreast in the esoteric science, lest the work to which he turned his hand should be unblest and fruitless.

At about ten years old he would probably leave his father's house for that of his paternal grandfather or grandfather's brother, to whom he had been promised in adoption. Arrangements for this transfer had very likely been made before his birth.

He called his new guardian *tibu*,¹ and owed to him the most particular devotion, becoming his food-getter, constant companion and, in time of sickness, unwearying nurse. From him he learned much of the arts and crafts of his people, and, above all, the old man was his sole tutor in the jealously guarded tradition of the family—the generations, the heroic deeds and the voyages of his ancestors ; the cult of the ancestral spirit or spirits ; the star-lore, the weather-lore, the geography, and the mythology of the race.

The boy would discard his baptismal name at this time and assume the name of his grandfather ; but that would not prevent him at a later date from taking yet another, and another after that, if he willed. In addition to all the knowledge of his *tibu* he would also inherit a large piece of the old man's land under a special title known as *te aba-n-tibu* (*the land of the adopted*), which constituted the reward for his faithful care. This was left to him and to the issue of his body. If at any time his lineal descendants became extinct, even after three or four generations in theory, the land returned to the lineal descendants of the giver, or, failing such, to the nearest collateral.

The object of the Gilbertese father in giving his son in adoption to an elder of his family was to provide for his aged relation a companionship and support which he, as a busy breadwinner, had no leisure to afford. It was a very sensible arrangement, calculated to promote high reverence in the young for the old and responsible for a great family solidarity. But it had some curious results, not the least strange of which was the decay of the local genealogies, for, as these have been handed down from grandparent to grandchild since very early days, alternate generations have often been skipped, and it is a very tedious business to build up a complete record of any given line to-day.

When the boy's pectoral and axillary hair began to grow strongly, which would be between the ages of 20 and 25 in a normal subject, he was considered ready for the succession of trying ordeals called collectively *te kanna ni maane*, which name may be interpreted, *the diet of a full-grown man*, and alludes to the increase of rations allowed to one who reached this stage. For the fifteen years that he had been living thin, his hair had been allowed to grow untouched, so that by the time the *kanna ni maane* era arrived he was the owner of a plentiful mop. When the star *Rimwi-maata* (Antares) appeared above the eastern horizon at sunset, the elders of his family appointed a day for the cutting of his hair.

Just before sunrise on the chosen day a large fire was lit on the eastern side of his father's house, and the boy sat down before it, facing east, after having eaten a full meal of coco-nut flesh. On either side of him stood a father's brother, urging him to stare unblinking into the flames ; behind him stood his father, armed with a large shark's tooth, with which he cut through the boy's tangled hair. The operation was

¹ The word *tibu* may mean any of the following :—Ancestor to the Nth degree, lineal grandfather, adoptive grandfather (as in the case above referred to), lineal grandson, adoptive grandson, and their female equivalents.

long and painful, but if the subject winced he was mocked by his watchful uncles, and if he attempted to turn his face from the scorching blaze of the fire they beat his cheeks with fans of coco-nut leaf until he gazed again into the flames. At the point of dawn the cut hair was divided into two portions, of which the smaller was thrown into the fire and the greater kept for future use.

This part of the ceremony was called *te kaura*, the *reddening* or *scorching*; the second part, known as *te kabue-ari*, the *burning of the eyebrows*, then began. The lad's adoptive grandfather approached, bearing a large shrivelled coco-nut leaf in his hand. This he set ablaze in the fire and, standing behind his grandson, shook over his naked shoulders and head a continuous shower of burning morsels. The heaviest of these were fanned away by the uncles, but the lesser sparks were allowed to burn themselves out on the bare skin, and if the lad flinched or attempted to wipe his streaming eyes he was taunted, pushed and thrashed by his stern guardians. When the leaf was burned out the rite was at an end, and all care was then taken to soothe the unfortunate and smarting subject. For two more months at the same phase of the moon this ceremony was repeated. At the fourth moon took place the ordeal named *te ati ni kana*.

Again at the dark before dawn a fire was lit up against the eastern side of the house, but this time only timbers giving the hottest flame were used, the iron-hard *Pemphis acidula* (*te engea*) being preferred. Close beside the fire was set a large stone¹, whereon the boy sat, facing east. There he was given to drink a mixture of fresh water, sea water and coco-nut oil in equal parts, stirred together in a coco-nut shell with the barb of a Sting Ray. This disgusting potion, administered to the recitation of a charm, was supposed to give him a courage that lasted not only through his ordeal but for the rest of his life. His father's brothers being beside him, his father stood behind, and with the point of a shark's tooth proceeded to lacerate his scalp about the cranium until the blood streamed over his eyes and cheeks. Thus they left him sitting on the stone from sunrise to sunset, only returning to replenish the scorching fire or to beat him about the face with coco-nut leaf fans if he turned his head away or allowed his shoulders to droop in faintness. At the same phase of the moon for three successive months the ordeal was repeated.

During the time occupied by these observances the boy's adoptive grandfather was engaged in making his first manly weapon—a lance of seasoned coco-nut timber from 10 to 12 feet long, with a double edge serrated by shark's teeth. The teeth were lashed into place with thin two-ply sinnet of which one strand was of coco-nut fibre and the other of the lad's hair saved over from the initial ceremony of cutting. The lance being finished, it was slung to the roof of his father's house to await the time when it might be claimed as of right by the full-fledged warrior.

A month after the third repetition of the rite of *te ati ni kana*, and as usual

¹ This stone (Gilbertese, *ati*) is, I think, referred to in the name of the ceremony, *ati ni kana*. The word *kana* means *feed* or *stoke* as applied to a fire.

at the same phase of the moon, the novice was taken to the eastern side of the island, where a small hut thatched with pandanus leaf had been built for him among the trees fringing the ocean beach. Accompanied by his adoptive grandfather, he was obliged to live in this dwelling until the thatch began to rot and leak above his head. This, in a succession of droughty seasons, might take four or even five years; in normal times it could hardly take less than two and a half years. The strictest watch was kept on him during this period. No woman, not even his mother or grandmother, might approach the place, and he was never permitted to go near the western or lagoon side of the island, where settlements were built. Youngsters were forbidden to have conversation with him; the senior members of his family brought his daily ration. He owed the most implicit obedience to the commands of his grandfather, who would set him tasks of strength, hardihood and endurance to perform. If ordered by the old man to go on an errand—perhaps, for example, to bring in some heavy stone on his shoulder from among the breaking surf on the ocean reef—he must walk straight to the task, turning his eye neither to right nor left, pausing at no impediment, wincing at no hurt, and shrinking from no danger. Every time he wished to leave his abode, he must ask the old man's leave, perform the permitted work, and return to his tutor. Nothing in the nature of amusement was allowed him; he was instructed to put away all soft and frivolous thoughts, and think only of deeds of strength, the day's task, the valour of his forbears, and all things befitting a worker and a warrior.

When the old man saw that the thatch came near to leaking, he put the physical strength of the young man to a series of severe tests. Logs of wood must be hewn with an adze of tridacna shell, in a given time; heavy boulders must be lifted and borne on the shoulder for certain distances; and saplings must be torn by the roots from the ground. If the pupil failed in his first effort, he was charmed by his tutor and given another trial, and another, until he succeeded, or until it was apparent that he could not succeed. Should he eventually not come up to the standard of strength required, a second house with a new thatch was built for him, and he was obliged to pass through the whole course again, from beginning to end. But failure was unusual, as I am informed. If a lad lacked strength, the efficacy of the family magic and the ancestral spirits might be relied upon, and such was the might of the spells whispered upon him that even with the puniest of arms he could easily perform the labours set.

So, when the thatch began to leak, the novice once more returned to his family; the new lance of manhood's estate was given him; a great dance and feast was held, and thus, without further ceremony, he was endowed with the title of *Roro-buaka, Warrior*. Often his marriage followed hard upon his release from confinement.

On Banaba the upbringing of a son was the same in idea but rather different in its ceremonial. At weaning, or shortly after, the first haircutting took place as in the lagoon islands, but a second shaving of the scalp, unknown (to the best of

my information) in other places, was performed when the child was about ten years old ; at this ceremony the hair was burned and its ashes rubbed over the boy's body.

When he was in the early twenties, which is to say when his pectoral hair began to grow strongly, his head was again shaved, the clippings being burned and their ashes this time mixed with a meal of coco-nut and eaten by the novice. He was then told to carry a heavy stone to the seashore from the house in which he lived ; if he failed, further ceremonies were delayed until he grew strong enough to do it ; but if he succeeded, he was at once made to sit on the beach, facing the sea, and heavily struck three or four times on the chest with the butt end of a coco-nut leaf swung by his father. He was required to take this punishment with unmoved face and even breath. His father then cast away the bludgeon and standing behind him actually kindled a small fire of twigs upon his shaven crown.

When the fire was well lit his grandfather, or sometimes one of his father's brothers, appeared before him, flourishing a solid staff called *te batiraku*, which he proceeded to sweep horizontally over the boy's head with all his force and with deafening yells, until of a sudden he struck the embers from the tortured scalp. It often happened that the weapon at the same time struck the boy's skull a glancing blow in its passage and stunned him, but this was considered a lucky omen, especially if blood was drawn ; this idea seems to be the same as that underlying the more formal ceremony of lacerating the scalp in the lagoon islands.

All these tortures had to be borne without a murmur, without a change of position, without even a wry face—otherwise proceedings would stop and the whole thing would have to begin again when the victim's hair had once more grown long enough to cut.

Girls.

Until the age of puberty a Gilbertese girl went naked, her virginity affording her all the protection she needed. The violation of maidenhood was everywhere looked upon as one of the most awful offences and was punished with great severity, unless of course it was part and parcel of the marriage by rape practised on Beru and Nikunau. On the island of Tamana, if a couple was found *in flagrante delicto* the man was floated off the ocean reef bound to a log of wood and the girl was taken to the family *maneaba* (*meeting house*), stripped naked, spread-eagled on the ground by lashing her hands and feet to stakes, and throttled by pressing a heavy beam of wood across her throat. Every one of her lineal kin alive, and every brother and sister down to the latest born infant, must have a hand on the beam as the dreadful sentence was executed. Her body was thrown into the sea.

But on other islands the man only seems to have been punished, usually by death if the girl's parents were strong enough to enforce it ; but if they were not, the offender's own family would, unless they were sworn enemies of the complainants, generally oblige him to forfeit a large piece of land in amends or, if he refused, would make an end of him themselves in order to prevent a blood-feud.

A girl's arrival at the age of puberty was a time of great anxiety to the parents, for then she was considered dangerously sensitive to enemy magic and especially to that sort which caused sterility. At the first menses she was made to sit, with her legs stretched straight before her and knees closed, on a mat at the western side of a house set apart for her ; she faced west, that point of the compass being as important to a girl as was the east, apparently, to a boy undergoing the initiation rites. The hair of her father, mother, and their male and female kin was cut to provide for her toilet, and if she were already betrothed, that of her future husband's relations was added. For three days she was obliged to remain in her place, moving as little as possible, and during that time her diet was very meagre, no cooked food at all being allowed her.¹

The girl's father and mother made a great quantity of coco-nut oil, which was thickened by boiling to the consistency of a syrup and used day and night for the anointment of her body. It was applied by her adoptive grandmother, who had supervision of all the charms recited in this and other operations. Such charms were nearly all directed towards parts of the girl's body with the object of increasing her beauty and making her a mother of men. To protect her against enemy spells, she wore a girdle of young coco-nut leaf split down the midrib and fastened about her so that the pinnules stood out like the rays of the sun. It may here be noted that the coco-nut leaf was greatly used in the magic, and especially in the protective magic, of the Gilbertese, being considered of great efficacy in preventing the attacks of fierce fishes at sea and the influence of death-spells on land.

While the girl was confined to her house, her mother's sisters sat about her making the first *riri* she would wear, which was of coco-nut leaf softened by chewing. Outside the house a continual feast was kept up by the members of her family, the food having been provided by both father's and mother's people. After three days and three nights she was allowed to leave her place and was taken by her grandmother to a well of fresh water, where she performed her ablutions, the old woman meanwhile reciting over her the spell known as *te katebo-n-rara* (*the washing of blood*). Three further days of purification she must pass in her separate quarters and then might return to her family.

Sometimes a maid might marry within a few weeks of coming to puberty, but far more often she would pass the next year or eighteen months in the *ko*, or *bleaching house*, where her skin might be whitened ere she became a bride. For this purpose a small thatched house was built at a good distance from the family settlement, and generally, but not always, on the eastern side of the island ; from the eaves to the ground all round the house a screen of coco-nut leaf was hung ; and in the interior

¹ Her urine was made into a coco-nut shell and most carefully destroyed, for fear of evil spells. The urine was, throughout the Group, considered one of the most powerful mediums through which magic might be directed against a man or woman. Therefore, a native will always, if possible, make water into the sea.

a small cubicle of mats was rigged up on a light framework, leaving an alleyway of 3 or 4 feet clear between its sides and the outer screen. The deepest gloom reigned within this cubicle, and therein the girl must live, deprived of sunlight and unseen by the people. Only her parents and grandparents were allowed near her ; her only constant companion was her adoptive grandmother, who attended to all her wants. She was allowed to wash and perform her toilet between the outer screen and the cubicle, but as soon as that was done she must retire again into the inner darkness. Thus she was obliged to live in utter manual idleness, since there was not enough light to guide her fingers at work, but to compensate for this she learned all the spells that her grandmother could teach her, most of them being connected with love, healing and the culinary arts.

During this time of solitary confinement the girl's skin was carefully attended to. Every day at sunrise her body was rubbed over with the creamy juice expressed from the flesh of ripe coco-nuts, and when this was dry it was washed off with fresh water. At mid-day her ablutions were made in sea water, and at sunset the cream was again applied, left to dry and washed away. In addition to this she was constantly massaged from head to heel by her grandmother, coco-nut oil being used as an unguent ; special care was given to the moulding of her arms, shoulders and breasts so that these parts might eventually appear to advantage in the sitting dance.

After a few months of such treatment, in a seclusion which no sunray ever pierced, the rich and dusky olive tint left her skin, and she became pale with the dark paleness of some Spanish lady, who never leaves her house until sunset. One still has the chance of judging what her appearance may have been because, though the formalities of the *ko* have long been abandoned, many Gilbertese women to this day continue to bleach themselves in private. The constant massage leaves the skin silken in texture, and the beauty of the subject, though no longer of a merry and full-blooded type, is certainly enhanced by etiolation.

To call a girl *kanoa n te roki*, i.e., *an inhabitant of the bleaching-house* (lit., *contents of the screens*), to this day, in allusion to the fairness of her skin, is to pay her the highest compliment, nor would it be taken amiss by a man. The whole idea underlying the bleaching process is closely connected with a race-memory of certain ancestral gods who, like the famous Tangaroa of Polynesia, were fair of skin and of a marvellous beauty. These lived in Matang, a bourne of departed souls and one of the ancient fatherlands of the folk, and although their descendants have become dusky by inter-marriage with Melanesian and (as I believe) negrito peoples, they still attempt by artificial methods to hark back to the glorious ancestral type.

When the grandmother thought that her skin could be improved no further, the girl was conducted from the bleaching-house to her home. There she was arrayed in festal ornaments and led by her mother and grandmother to a dance given in her honour, of which she was to be the central figure. Taking her by the right hand her mother brought her to her place, and when she was seated

drew a circle on the floor around her with her fingertip ; this she did three times over, muttering the spell called *te tae-ibennao*, the *vanquishing of misfortune*, and supposed to bring success in all undertakings. Around the maiden's neck were then hung garlands of flowers, generally by the uncles of her betrothed, and these must not be removed save by the givers ; nor must she leave the magic circle drawn by her mother until led by the right hand therefrom.

While the dance was in progress it was considered a very lucky omen if a frigate bird (*te itei*) should poise on moveless wing overhead, while it was believed that the creature would descend and hover around the head of a girl of very high birth, if she had been fittingly prepared. The dance continued through the afternoon, evening and night until just before daybreak the next day. At the hour of *kaarangaina* (*dark before dawn*) the poor, tired girl was led away by her mother and grandmother and taken to the lagoon beach, where she was bathed all over with sea water in order to prevent enemy spirits from assailing her during her first sleep at home and destroying the effect of all the protective and auspicious spells that had been cast upon her.

The Banaban practice seems to have coincided with that of the lagoon islands in all this ceremonial, but it appears that there the girl was put in the bleaching-house very often before instead of after the age of puberty.

(NOTE.—Compare Gilbertese *ko* with Rarotongan *noo are pana* alluded to by Wyatt Gill, *From Darkness to Light in Polynesia*, p. 29.)

DEATH.

The formalities to be described were observed whether the deceased was a man or a woman, and with but slight local variations among all the Gilbertese-speaking communities.

On the three nights following a death the ceremony of *bo-maki* was performed. All the people, irrespective of their kinship to the deceased, gathered together in the darkness, with sticks of pandanus wood and the butt ends of coco-nut leaves in their hands, at the southern extremity of the village, and, forming a line abreast from east to west, slowly advanced northwards, beating the ground and trees before them with their staves. Not a word was uttered. When the line had swept through the settlement from south to north it stopped, and the participants disbanded in silence. All pedestrians who happened upon the party while it was at work would seize a staff without a word, join in, and when it was finished pass on their way. The object of the ceremony was to encourage the soul of the dead to leave the neighbourhood of the body and also to drive away any evil spirit that might wish to possess it.

Immediately life was extinct the family began a great wailing and yelling, which was kept up by relays for three days without intermission, except when the ceremony of *bo-maki* was being performed ; to have sustained it during that rite would have

been to encourage the soul of the dead to linger about the body and to haunt the living.

The privilege of attending to the corpse was generally claimed by the women of the household, though a loving son or grandson might also take part; no *tabu* lay upon the attendants when the task was done. Their first duty was to anoint the body from head to foot with coco-nut oil, which had been scented with flowers of the *uri* tree (*Guettarda speciosa*), or with a handful of the desiccated pith of the wild almond. The latter substance was much used on Banaba, where almond trees grow profusely; it was much valued, as the *kunikun* (wild almond) was considered to be the favourite tree of the ancestral goddess Tituua-bine, who dwelt in Matang, one of the bournes of departed souls.

If necessary, the attendants, having finished the anointing of the body, would provide it with a new sleeping mat and waist mat; but unless a native had died very suddenly he would have asked for these before his decease, for the Gilbertese will always pass out like a gentleman if he can.

The body was disposed, after being dressed, on its back with head to east and feet to west, arms beside it, and open palms upward. On the lagoon islands its legs were straightened together with toes pointing up, but on Banaba they were first bent a little and then the knees were pressed outwards, away from one another, until they touched the ground, which resulted in a frog-like position. In the open palms were then laid two *waea*, or small shrivelled coco-nuts, which were supposed to prevent the soul from returning to trouble the family. For this interesting belief I have not, in four years of questioning, been able to find a reason; all that I have obtained from the natives has been an emphatic denial that the coco-nuts provided food of any sort, either for the soul of the dead or for the spirits that barred his passage to the land of shades.¹

The body was kept for three or nine days, being buried on the fourth or tenth, as the case might be. Those who kept it for the shorter period were of the opinion that, as the soul had finally been driven from its neighbourhood on the third repetition of the *bo-maki* ceremony, it might safely be laid to rest on the fourth day. But many families, and particularly those of Tarawa and Butaritari, believed that the soul might reinhabit the body at any time during the nine days after death, and so, though they took the greatest pains to prevent it, still kept its fleshly tenement available until the last moment. This belief may have been founded upon cases of suspended animation experienced long enough ago to have become garbled in the telling; there are stories on the northern islands of the Group of souls that have returned to bodies already far gone in decomposition, with results unnecessary to relate.

Sometimes the dead body was kept in a dried state for indefinite periods; this will be returned to later.

¹ Shrivelled coco-nuts are much used in native magic. A *waea* was one of the missiles used by the culture-hero Bue to pelt the sun and cool his heat.

A short while after death in these tropical islands the corpse would begin to cause offence, but it was a deadly insult to the departed to exhibit signs of disgust. Bundles of leaves were burned close to the skin, while into the mouth, ears and nostrils were inserted sweet-smelling flowers. If the skin began to peel it was carefully picked off and dropped into a coco-nut shell (called for this purpose *te mangko-ni-kanei*) containing scented oil. In the lagoon islands, both receptacle and contents were afterwards thrown on a fire on which a few large, flat seeds called *itu* were roasting; these seeds were found among the jetsam of the western beaches, and had a sweet savour when burning, which was said to be pleasant to the dead. On Banaba, the *mangko-ni-kanei* was emptied of its contents far out to sea on the western side of the island.

On the third night, after the final performance of the *bo-maki* ceremony, one of the female relations of the deceased came to utter the final spells, which would—to translate the native idiom—"straighten the path of the soul to the land of ghosts." She was called *te tia-tabe-atu*, the *lifter of the head*, because she held the dead person's head in her lap while muttering her spell. If her work was well done, it was believed that the body appeared to shine like fire (possibly with the phosphorescence of decay) in the eyes of the soul, who turned away in fear and at once set out on his journey to the last bourne. If the body was kept for nine days, the *tia-tabe-atu* performed her office every evening, from the third to that preceding the day of burial.

The night before burial, the assistants dressed the body in a new waist mat, and laid it upon a fresh sleeping mat with wreaths of scented flowers about its neck. Everything that had hitherto come into contact with the dead was then burned, except the shrivelled coco-nuts, which remained on the upturned palms.

The grave was generally dug in the floor of the house, though sometimes it was outside; its depth was about 18 inches, or at most, 2 feet. The body, wrapped in its sleeping mat, was first laid face upwards in the hole; over it was drawn a coarse screen of coco-nut leaf, and this again was covered with a finer mat. The grave was then filled in with sand and its limits demarcated with a rectangle of small white stones; but often there was nothing to distinguish it at all. For three days after the burial the family feasted and danced while, at the same time, the closer relations of the deceased cast themselves upon the grave and wailed at the top of their voices. These mourners very often composed songs or dirges for the occasion, the most memorable of which remained in the family for generations; a few are still extant.

A dear relation of the deceased would make a bed of the grave, and open it from time to time to look on the loved remains—or to appropriate a bone or two for the manufacture of the family fish-hooks, thatching tools, and other useful things. The skull was very often removed and, after being carefully cleaned in sea water, was wrapped in a mat of fine mesh and preserved in a box of pandanus wood.¹ The widow or child of the deceased would sleep and eat beside this reliquary,

¹ An example of such a box, from the island of Beru, is to be seen in the British Museum.

carry it about in all excursions, and anoint the skull frequently with coco-nut oil. When the teeth dropped out they would be kept and the canines used for making dancing necklaces.¹ After several years the skull was buried again with the skeleton ; or it might be planted in the ground near the dwelling-house, in such a manner as to leave the cranium protruding above the earth. Around this a small, square, white-shingled enclosure was demarcated by a low curb of trimmed coral, and the place became a sort of shrine, *kamaraia* or *death-to-approach* for all strangers, but whither the relations of the deceased regularly resorted to anoint the cranium with coco-nut oil and to claim help from the spirit of the departed in their various ventures. Sometimes successive generations of skulls were thus planted side by side, at a distance of about 2 feet apart ; a row of five existed until about 1898 in the village of Noto on Tarawa.

Rarely, a whole skeleton was dug up and the bones were hung to the ridgepole of the family meeting-house, whence they were lowered from time to time and anointed for good luck in fishing, war or love. The bones of one Kouraabi, dead for eighteen generations, still hang in a village on the island of Tabiteua.

The position of the body in the grave was a matter of great moment. On Banaba it invariably lay with head east and feet west. In the lagoon islands, the feet (which, in my opinion, deserve particular attention) might point either west or south ; other orientations were forbidden, the belief being that they prevented the soul of the dead from reaching the land of shades, and thus turned it into a lost soul (*te taamnei ae bua-nako*). The migration tracks along which the population of the Group swarmed led back precisely to west and south, so far as the lagoon islands were concerned, while Banaba was peopled from the west alone. Hence the alternative dispositions of the dead man's feet in the former and the absence of alternative in the latter.

In lieu of immediate interment the body sometimes underwent an interesting process of sun-curing, with a view to its preservation. Of this I had an account from Toakai of Maiana, a very old man, who remembers having seen his adoptive grandfather's remains so treated. The corpse was attended to during the first nine days exactly as if it were to be buried on the tenth, with the exception that the fumigations with burned leaves were more thoroughly carried out than usual. Until the twelfth day, growing ever more bloated as the processes of corruption advanced, it was kept in the semi-darkness of the house, which had been screened about with coco-nut leaves for the occasion, and during that stage all crawling life that appeared on its surface was removed and burned. On the thirteenth day the abdomen collapsed², and the protruding eyeballs began to return into their sockets. A platform

¹ Several specimens of tooth necklaces from Abemama are in the British Museum ; they belonged to the High Chiefs of the island, and are said to contain teeth from the skull of Tem Mwea, who founded the present dynasty nine generations ago.

² This might be caused artificially, by puncturing. The joints of arms and legs were also sometimes punctured.

of *te ba* (midribs of the coco-nut leaf) was raised about 4 feet from the ground on corner-posts of *pemphis* timber, in a place chosen for its lack of shade, and upon it the body was laid to cure in the sun. There it remained diminishing daily in size, the process of desiccation being helped by the continued removal of organic life, fumigations with burned leaves, and frequent anointings with coco-nut oil thickened by boiling, until all that remained of it was a skeleton whose salient bones were held together by a parched and blackened hide.

In this condition it was removed to the house and laid upon a special shelf reserved for it under the northern gable. It might be kept for several years. My old informant's grandfather remained unburied for a period which, though not clearly defined, seems to have been little less than a lustrum, being constantly rubbed over with oil to keep the hide in condition. The bereaved relations would often mount upon the shelf to sleep beside the dead ; they would anoint the head with oil to the accompaniment of charms for good luck ; and they would deck the body out in garlands of flowers on days of feast and dance. On one or two occasions the beloved mummy was taken to the dance, and lay on its back among the audience, the recipient of all the courtesies extended to a distinguished guest. After a few years of such treatment the family seems, however, to have tired of its ancestor, who was then buried in the usual manner, his head having first been cut off, scraped and deposited in a box as described above.

The Destination of the Soul.

To Turner belongs the honour of first recording a Tamana belief that the soul went to a paradise in the western horizon called *Mane*. The following is an extract from his account : " As soon as life was extinct in any member of a family the living cast lots about the spirit's destiny, as boys play at ' odds and evens.' If the small pebbles used turned out ' odds,' then the soul at the horizon was crushed between two great stones and blotted out of existence ; if ' evens,' the soul passed on to *Mane*, where there was plenty of food and fine streams. The dying were urgent in begging those around them to see and make the *Tapunea*, or pessomancy, to go all right, and so secure an entrance to the *Mane* paradise."

The pessomancy was actually called *te kiri-kiri, the pebbles*, the name *Tabunea*¹ applied by Turner being a generic term covering the whole of magic in the Group, but the other details of his record are corroborated by the few old pagans left by the advance of Christianity on the island. However, there was an entirely different belief about the destination of the dead, which Tamana shared with the other units of the Group ; this will be referred to later.

¹ The spelling *Tabunea* is certainly more suggestive of the sound of the word than Turner's *Tapunea*. There is no true *p*-sound in Gilbertese.

Certain families on Banaba had the Mane tradition, and I think it was from Banaba that it was carried to Tamana, for on each island there is independant evidence that Tamana was populated for the first time in its existence by Banaban fugitives led by a chief named Nawai (called Noai by Turner), who had been driven from their home by the hero Au-Ria-Ria.

Another fragmentary Banaban tradition mentions a paradise reserved to the souls of dead fishermen, which is called Matennang, lies in the west, and, according to report, is buried under the sea ; but, though the words "under the sea" are understood in a literal sense by the natives of to-day, they should be interpreted figuratively, "over the horizon," which is to say, very far away.

Mane and Matennang are the only two bournes of departed souls explicitly located in the west, and both these, as it seems, were known only to the Banabans and their descendants on other islands. On the lagoon islands, including Tamana, a vast majority believed that the soul's destination lay in the north, not in the west.

But here a point of extreme importance must be made. *The north of the stories means north in respect of Samoa, not of the Gilbert Islands.* Seven hundred years ago (28 generations of 25 years) the Group was invaded and its people dominated by a fugitive host from Samoa ; it is the traditions of these conquerors that the modern race, with few exceptions, has inherited. To this day, the people call themselves with pride "the children of the Tree of Samoa (*Tamoa*)," or simply "the breed of Samoa" (*te bu-n Tamoa*), and every genealogy that they possess leads back to that land. It is impossible, in a paper of this length, to enter into detail ; all that it is necessary to emphasize here is the fact that the paradise-tradition, like the immense majority of those race-traditions now remembered, was developed in Samoa, and, although long transplanted to the Gilbert Group and interpreted in a perfectly literal local sense by the natives, must be regarded by us as purely Samoan in its orientations. It would indeed be convenient to believe otherwise. Clearly, the road to paradise was the way back along the old migration track to the ancient fatherland of the race ; and if, falling to insidious temptation, we persuade ourselves to agree with the modern native in assuming that the dead go north out of the Gilbert Islands, we are brought with immediate plausibility to the Marshall Group, whence it is easy and delightful to be lured by way of the Carolines along the Equator to the very gates of Indonesia. Undoubtedly, I think, the Gilbert Group was first populated from that precise direction, but that was long before the coming from Samoa, and to prove such a case we must rely upon other evidence : it would be disingenuous to use the "north" of the paradise tales as meaning anything but "north of Samoa."

The following is an epitome of the paradise tale common to many islands of the Northern Gilberts ; it represents fairly well all the units from Nonouti to Butaritari, though some of the families do not remember all the details to be given, while others record matter peculiar to themselves, which cannot appear here.

For three days after death, the soul remained near the body, but, frightened at last by its burning appearance, hurried away to begin its journey to the land of shades. Turning first to eastward, it crossed the island to visit the ancestral spirit Tabakea, who lived among the trees by the ocean shore, awaiting there the souls in search of the last bourne. "Delay not," said he, "but go at once forward to the Lady Tituua-bine, the ancestress, who dwells in Matang-of-Samoa; she will direct thee to thy northern home."

Southward then went the soul to Matang-of-Samoa, the wonderful land that harboured the fair-haired ancestors, but yet was only a counterpart of that other and final Matang in the north, whither the spirits of the dead must ultimately tend. "This is not thy place," said the Lady Tituua-bine; "turn again to northward and journey until thou comest to Nakaa's land of Bouru, which is hard by Matang, for that is thy place."

So, in the path that she had pointed out, the soul returned to northward, treading the sea as far as the southern islands of the Gilbert Group, then leaping from isle to isle until Makin in the extreme north was reached, and thence again walking on the face of the waters. Soon, in the middle spaces of ocean, its way was barred by the fearsome hag Kara-ma-kuna, daughter of Nakaa, the guardian of Bouru. Fast she clutched the soul and searched it for the marks of the tattooing-needle; these she scraped away with her long nails and swallowed, saying, "Pass from Manra, land of the living, to Bouru, land of the dead." Then she touched the soul's eyes with her hand, bestowing upon them the vision of spirits, so that the way seemed no more dark, but clear and easy. But if she found no tattoo-marks, since food she must have, she plucked out the pupils of the soul's eyes and devoured them: and some say that it went blind thereafter, and never came to the land of Bouru, but most men believe that Kara-ma-kuna would touch the sightless eyes, giving spirit's vision, and send it forward in peace.

Onwards again into the north went the soul until it came to the land of Bouru, and Neineaba, and Matang. At the southern gate of Bouru sat the guardian Nakaa, awaiting the souls that came from Manra, land of the living. And as he sat he was for ever making nets¹, with his back turned to the path that led to the entrance of his dwelling-place, but well he knew when a soul crept up behind him. So, when it was near by his right hand, he reached forth and enmeshed it in the strand of his netting-needle; he laid it across his knees; he searched its heart for evil. And if he found incest therein, or thievishness, or cowardice, he straightway cast the soul out of his sight into a place of everlasting nightmare called *Te Kai-ni-kamatene* (lit. *The punishment of unrestful sleep*); or he impaled it upon the terrible stakes, the *Kai-ni-kakeke*; or he flung it into the midst of a company who

¹ Cp. Gilbertese Nakaa with Akanga of the Cook Islands. Akanga also had a net, in which he caught the souls descending (or going west) to Avaiki. Philologically, there is no irreconcilable difference between the two names.

writhed together in eternal entanglement, called *Te Reke-rua* by some, *Te Anou* by others.

There are who say that if a soul was adroit, it would pass craftily by Nakaa's left hand, so avoiding entanglement in his strand : then it might look upon the land of Bouru for awhile and again return to its earthly body. But most men believe that escape from the guardian at the gate was impossible, and judgment inevitable.

So if the soul passed muster with Nakaa, it must dwell for three days in his village, at the entrance to the land of Bouru and Neineaba. In that place was a fish-pond no more than ankle deep, but of a vast size, wherein lived but a single fish called *te mon* ; and beside the fish-pond grew a tree named *Tara-kai-maiu* (lit. *Behold the living tree*), upon which grew only one nut. And during its sojourn in Nakaa's place the soul must live on the food of the fish-pond and the tree. Yet was its hunger always appeased, for when the fish was caught another appeared in its place, and when the nut was plucked a new one grew in its stead.

When three days were accomplished Nakaa said to the soul, "Enough ! Thou hast repaid thy days of waiting beside thy body in Manra : pass on now into Bouru and Neineaba." So it went forward into its final home, where it was joined with the other spirits, and sat with them feasting on the food called *Renga*, which is red in colour and therefore dear to Tituua-bine, the ancestress, whose home is hard by in the land of Matang. And sometimes the soul went northwards again, out of Bouru to the place called Marira, where the dead may also live.

Such is the tale most usually heard. In Butaritari and Makin the families have a version that is more detailed in its account of the beings who bar the soul's progress to ultimate rest. These beings are mostly black man-eating hags, who frighten it with horrible mouthings, and are strongly reminiscent of the bogeys met by Fijian souls on the road to Ndelakurukuru (*cf.* B. Thomson, *The Fijians*, p. 117 *et seq.*) ; there is also an ancient black-skinned idiot-god named Noubwebwe, who forces the soul to admire his skill in the game of *Wau* (*catscradle*), of which he was the inventor and patron.¹

Butaritari and Makin give Matang alone as the land of departed spirits. On every other lagoon island Bouru and Neineaba, coupled together, are most generally accepted, though among certain families of Beru, Nikunau, Onotoa, Nonouti, and Tabiteuea, a land called Mwaiku is mentioned as the home of Nakaa the guardian. Lastly, Manra, which is the name applied, as a rule, to all the world of living men and women, is sometimes used in the Northern Gilberts to designate that particular space of sea trodden by the soul immediately before arriving at Bouru.

¹ Noubwebwe's association with Cats' cradles suggests that he may be a submerged Melanesian creator. I have been told by old natives that those who were skilled in this half-forgotten art could picture in the twisted strings the successive stages of creation.

As already pointed out, a vast majority of Gilbertese-speaking peoples place these spirit lands in the north. Hitherto, the only exception to the rule that we have seen is the Banaban belief, also held on Tamana, in the two lands of Mane and Matennang to westward. But a much better-known paradise with the Banabans is the Bouru of the lagoon islanders ; and with the Banabans Bouru is neither west nor north, but *up—up* in the skies above the island ; this opinion is shared by several families of Nui, which is a Gilbertese-speaking community of the Ellice Islands, not Banaban in origin, but Tarawan.

If the paradise of an island folk is up in the heavens, it generally means that the people have been for so long resident on their morsel of land that they have forgotten the direction from which their forefathers came ; they can no longer direct their dead back along the old migration-track to the ancient fatherland. Naturally, such folk must consider themselves autochthones of their island home. Do the inhabitants of Banaba and Nui answer to this test ? The Banaban creation-myth makes Banaba the first of all lands, the navel of the universe, the home of the first ancestors, and far more ancient than Samoa. The appendices to the creation-myth tell how certain ancestors, whose names were Taburi-mai and Au-ria-ria, set forth from Banaba to sail the southern ocean, where they found a barren rock in the sea ; called it Samoa-the-Namesake in memory of a small district of their home-island ; made it their home and, ultimately driven out, returned northwards to the Gilbert Islands seven centuries ago. *They never returned to Banaba*, which is now populated by descendants of those who did not take part in the migration to Samoa.

The Banabans therefore believe themselves to be autochthones, belonging to the parent stock of that race which ultimately invaded the lagoon islands from Samoa. Again, the Nui families assert that Banaba and the Gilbert Islands were first of all created lands, wherein lived the first of peoples—the Children of Night and Day, whose continual pleasure it was to play in the sea among the islands : that is to say, they were a race of sailors. After a great time certain families of the Children went southwards to Upolu of Samoa, lived there many generations, until at last, being driven forth, they returned to their first home, the Gilbert Archipelago.

These accounts cannot be mere distortions of the tale believed by the huge majority of the Gilbertese, that Samoa was the home of the first ancestors. Why and how should units so far apart as Banaba and Nui conspire to subvert the race dogmas—the prideful claim to Samoan origin, the belief in the northward destination of the dead ? How, indeed, could the Banabans be accused of distorting a Samoan dogma, since they can show that the Samoan invaders never came near them ?

It is impossible to enter into great detail, in a paper of this scope, without appearing to wander from the main subject, which is, the destination of the dead. But for the purposes of the discussion on hand I would state that, after six years of research among the traditions and “log-books” of the islanders, I believe the Banaban and Nui claims to be correct. Originally, in the Northern Gilberts at least (and

probably in the Marshalls and Eastern Carolines), there lived a Polynesian or Melano-Polynesian folk, a great number of whom ultimately swarmed southwards to Samoa ; some stayed behind in the Line Islands. Those who had invaded Samoa remained there for at least seven centuries, during which time they grew to believe themselves autochthones of Upolu ; but still they remembered the names of a few ancient fatherlands, whither they sent their dead in a northerly direction, along the last and only stage of their migration track of which rumour continued to subsist among them, to the Gilbert Islands. Those who had stayed behind in the Line Islands forgot that their ancestors had ever come over the sea, and despatched the soul upwards.

Then came the return from Samoa. The lagoon islands were overrun, and their inhabitants dominated, by a swarm whose doctrines still centred about Nuclear Polynesia ; the invaders still conceived Samoa to be the navel of the universe. So their dead must first go back to Matang-of-Samoa, and thence return on the northern track that had been established while the people were in Upolu. It must go *northward in respect of Samoa*. This direction was the dogma of a conquering people, and therefore altered not ; but during the centuries that followed its transplantation to the Gilbert Islands it became confused, so that it was ultimately taken to mean *northward in respect of the Gilberts* ; now, therefore, the soul passes over the sea to north of Makin.

As for Banaba, it was never invaded by the returning swarm ; its original faith was therefore never corrupted ; its dead continued to be despatched upwards. The Tarawan ancestors of the Nui people certainly suffered the Samoan invasion, but they hived off to Nui soon enough to preserve their traditions fairly intact ; hence their agreement with the Banabans.

If the above is a correct statement of the facts, it certainly offers a good explanation of the generic likenesses which underlie the specific differences between initiation rites, marriage ceremonies, etc., as practised respectively on Banaba and the lagoon islands. The inference is that in Banaba are to be seen the original forms, which in the lagoon islands we see modified by contact with other peoples and conditions in Samoa.

THE IDENTITY OF THE ANCESTRAL LANDS.

Whither must we look to find those fatherlands to which the departed souls returned ? The Mane and Matennang traditions point to the west, and the natural tendency is to search for those two places among the islands of Indonesia ; but I, for one, have never found them there. Bouru, of course, reminds us at once of Bourou in the Molucca Sea, especially as several attempts have been made to identify Polynesian Pulo-tu with the same island. If this were the only coincidence to be noted, it might well be a matter of chance ; but several places near Bourou bear the names of Gilbertese paradises, which can hardly be ascribed to chance, and I think we behold

in them an ancient home of the race. Matang has its counterparts in Mattang of Borneo, Medang of Sumatra, Maddang of Sumbawa, Malang of Java—possibly also in Sa-marang and Pa-malang of the same island. Makian of Gilolo may be a variant of the same name ; Gilolo itself is well-known in Gilbertese song and tradition as Kiroro, and the people of the Marshall Islands are called to this day the Bu-Kiroro, *the breed of Gilolo*. Manra, known in some islands as the space of water south of Bouru, can hardly be other than the Banda Sea which washes the southern shores of Bouru. Mwaiku, name of one of the spirit lands, is but a variant of Waigiou, an island a little to the east of Gilolo. And if Bouru, Matang, Manra, Kiroro, and Mwaiku do not sound sufficiently convincing, some of the place-names of the Gilbert Group may be quoted to help the discussion. There is Tarawa in the North Gilberts, and Talowa in Celebes, and Salawa-ti hard by Waigiou in the Spice Islands ; Manipa, a village name of the Gilberts, and Manipa, an islet between Bouru and Cerm ; Bangai, a village of Tabiteuea, and Bangaai of Celebes ; Bura-Bura, a Gilbertese land-name, and Pura-Pura by Timor. Lastly, there is Beru of the Southern Gilberts and Berou, the western peninsula of New Guinea, on the coast of which lies Waigiou, which we have already connected with Mwaiku.

In addition to the above, it would be possible to quote from Gilbertese songs and travel-tales the names of many other places in and around the Banda Sea. But these things will be dealt with at length in a fitter place ; it is sufficient here to have indicated a possible direction in which to look for those spirit lands whither the Gilbertese soul tended on release from the body.

ON THE LONG BARROW RACE AND ITS RELATIONSHIP TO THE MODERN INHABITANTS OF LONDON.

By F. G. PARSONS, F.R.C.S.

(*Vice-President, Royal Anthropological Institute.*)

IN *Biometrika* (Vol. iii, 1904, p. 242) the late Dr. Macdonell, speaking of the Whitechapel series of skulls, says, "The great average length, the comparative narrowness, and the resulting degree of dolichocephaly are, of course, not the only distinguishing marks of the Whitechapel crania; but they are those which strike the most casual observer. They lead us at once to ask, where can we find anything which in the least corresponds to these English characters ? The answer appears to be, only in the Long Barrow crania of this and other countries. They agree with nothing else on the Continent with which we are acquainted. Our crania do not accord with *Anglo-Saxon*, with Romano-British, or with Round Barrow British, but are in general appearance and biometric constants remarkably close to the Long Barrow British."

Then follows a table of comparative measurements in which we find no notice whatever taken of Anglo-Saxon skulls, but the writer goes on to say, "An examination of these characters seems to warrant the statement, which is amply borne out by the method of appreciation, that the crania of Londoners of not more than 200 to 300 years ago indicate that a very large proportion of the inhabitants of London at that time were of a type which can only be described as approaching that of Long Barrow man. Whether the Long Barrow man has remained a denizen of London through all the invasions to which the country has been subject, or whether a process of selection has gone on, the London environment being suited only to the Long Barrow type, we cannot yet say, but when long series of modern English skulls from other places are dealt with, we shall no doubt see our way farther. Meanwhile the only general conclusion which we can reach is the simple but startling one that the London city crania—from Whitechapel to Moorfields—are far more closely allied to the Long Barrow type than to any other. We do not see how to avoid this conclusion ; it is hardly needful to say that, if verified, its importance from both the craniological and historical standpoint can hardly be exaggerated. It would mean that at any rate a section—probably a large section—of the English population are not *Anglo-Saxon*, nor Scandinavian, nor even Celtic, but belong to a still earlier race."

This statement appears to be perfectly definite and understandable, but before proceeding to criticize it, I must make another extract from the same paper.

The second is from p. 207, where Dr. Macdonell says, "Judging solely by appearance and range of abnormality—in default of any published measurements—Prof. Pearson suggests that the present series" (the Whitechapel) "and in a still more marked manner the second series referred to above" (the Moorfields crania) "are closer to the Long Barrow British than to the Round Barrow British, Romano-British, Anglo-Saxon, or the Mediæval English which are represented in our museums."

I think that no one can doubt that, if supported by careful evidence, these conclusions of Dr. Macdonell are indeed simple and startling both from a cranio-logical and historical point of view, nor is there any room for doubt that he was directed toward them by the acumen of Prof. Karl Pearson. My only wonder is that, considering their startling though simple character, they have never, as far as I have seen, been discussed during the last sixteen years until I brought the matter up at the recent meeting of the British Association at Cardiff.

There, after giving the evidence which follows in this Paper, I elicited from Prof. Pearson that he was still of opinion that the modern Londoner was more closely related to the Long Barrow man than to the Anglo-Saxon or any other, although Prof. Fleure was of opinion that I had proved, as far as our present knowledge will allow, that he was almost identical with the Anglo-Saxon and differed markedly from the Long Barrow type. This important question, one of first-rate anthropological interest, is therefore still under discussion, and as a first contribution towards its settlement I wish to lay some further information about the Long Barrow folk before the Institute.

It is a surprise to me that so far I have come across no historical criticism of Prof. Pearson's and Dr. Macdonell's claim for the origin of my fellow citizens, nor can I find that it has been accepted without even a protest. As far as I can learn, it either has been unnoticed or ignored. I am not an historian, but I should like to ask whether London was not a most important town of the Anglo-Saxons? and also whether there are any long barrows, megaliths or skeletal remains to show that its site, or anywhere near its site, was a favourite resort of the Long Barrow men? I know that round barrows exist in Greenwich Park, five miles from London; but I fancy that we should have to go to Sussex or Wiltshire or far into Kent for the nearest remains of Long Barrow man.

I cannot answer these questions with authority, but I can ask them, and hope that some archæologist or historian will throw light on the subject.

In dealing with the question to-day we have, I am glad to say, more material to work with than Dr. Macdonell and Prof. Pearson had when they made their simple yet startling discovery, though quite enough was ready to their hands in 1904 to support or refute their thesis if they had cared to take the trouble to examine it. I am not going to cavil in any way at Dr. Macdonell's examination and description

of the Whitechapel and Moorfields series of skulls. I consider them a valuable addition to our knowledge of what seventeenth and eighteenth century Londoners were like, and I have published the records of another, rather later, series of London skulls, taken from Clare Market region, which shows that the Whitechapel and Moorfields characters were reproduced there too.¹

So far, then, Dr. Macdonell and I are in perfect harmony as to what the Londoner of the seventeenth and eighteenth century was like, and if Prof. Pearson had taken the trouble to examine and measure, or even to examine without measuring, Long Barrow and Anglo-Saxon skulls, he would have thought twice, probably, before committing himself to his hypothesis. But in any case no real harm has been done, perhaps rather good, because he has pointed out the need of trying to get further knowledge of Long Barrow and Anglo-Saxon skulls.

The limits of a single communication will not allow me to deal with both these subjects, so I must content myself with laying before you an account of the examination of twenty Long Barrow male skulls with the faces intact, because it will be found that in tracing out racial characteristics the face is quite as important as the cranium.

The skulls which I used were taken from the Thurnam collection in the University of Cambridge and the Rolleston collection in the University of Oxford; one skull, unfortunately, is all that the Royal College of Surgeons Museum can contribute, and one is preserved in Guy's Hospital Museum. There are probably other perfect skulls scattered about the country in local museums, but they will take years to locate and obtain permission to borrow, and I am trusting to the effect of the publication of this paper for helping me to gain that permission. Meanwhile there is every reason to believe that, if it can be shown that the present series is a homogeneous one with a low coefficient of variation, above all if it possesses certain constant and characteristic features throughout the series, it is unlikely that more material will modify it appreciably.

In dealing with skulls I have for many years felt the need of planning and recording measurements which will enable a type of the series to be reproduced from an average of the measurements. This is impossible from any series of measurements which I have hitherto seen—indeed I was first persuaded of the necessity for devising something of the sort by trying to reconstruct an average Whitechapel skull from Dr. Macdonell's measurements. It could not be done because the author had not that end in view, but had only set out to tell us what certain arbitrary measurements were without arranging for us to fill in the intervening gaps.

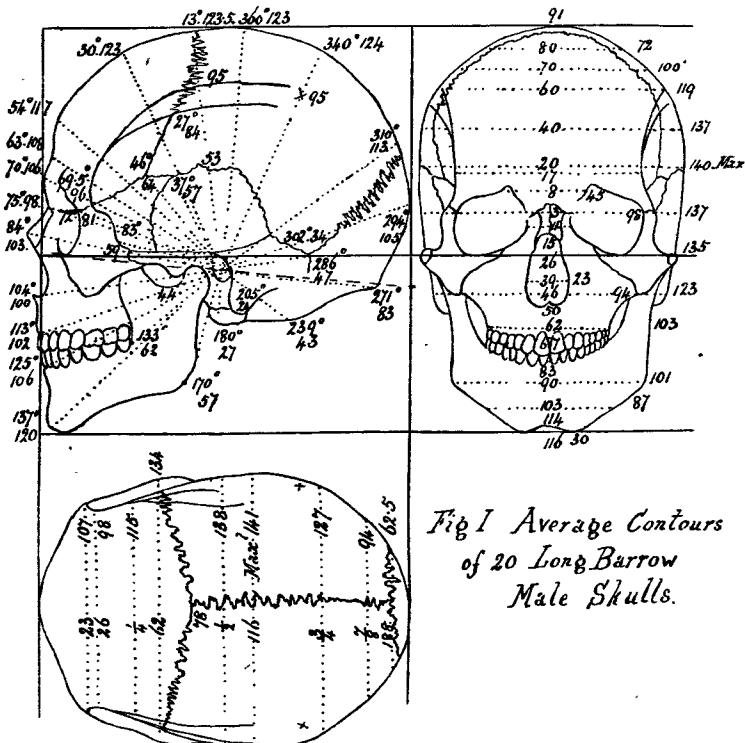
My plan is, I admit, laborious—and this is the most damaging criticism I have heard so far—but I am pleased to see that one or two younger craniologists are using it with good results.

In the first place a projection contour of the front, top and side views of each skull is made with Martin's dioptograph, and these are checked by numerous measurements

¹ *Lancet*, April 20th, 1918.

of the actual skull with the craniometer. They are all taken on the Frankfurt orientation and are arranged as in Fig. 1, so that the various points of the different views shall coincide. If they fail to do so the cause of the misfit has to be found and rectified.

A line is then drawn through the lower margin of the orbit to the middle of the external auditory meatus or 6 mm. below the auricular point on the Frankfurt plane. From the middle of the meatus a perpendicular to the last line is drawn upward and downward.



*Fig I Average Contours
of 20 Long Barrow
Male Skulls.*

FIG. 1.

The four lines now radiating at right angles from the middle of the meatus give 90° , 180° , 270° , and 360° of a circle, respectively.

It is now possible to draw as many radii as may be thought necessary to any points of the skull which may be chosen and to record the angle and distance of the desired point from the centre of the meatus.

Fig. 1 shows that the points are close together where the skull is altering its curvature rapidly and wider where its contour is more regular.

Starting from 1° the following points are marked on the periphery :—(1) Bregma, (2) 30°, (3) Frontal eminence, (4) Ophryon, (5) Glabella, (6) Nasion, (7) End of nasal bone, (8) Nasal spine, (9) Upper incisor point, (10) Lower incisor point, (11) Point of

chin, (12) Angle of lower jaw, (13) 180° , (14) Mastoid tip, (15) Opisthion, (16) Inion, (17) Occipital point, (18) Lambda, (19) 340° , (20) 360° . When these points are joined by anyone with a knowledge of the shape of a skull, it will be found that it is

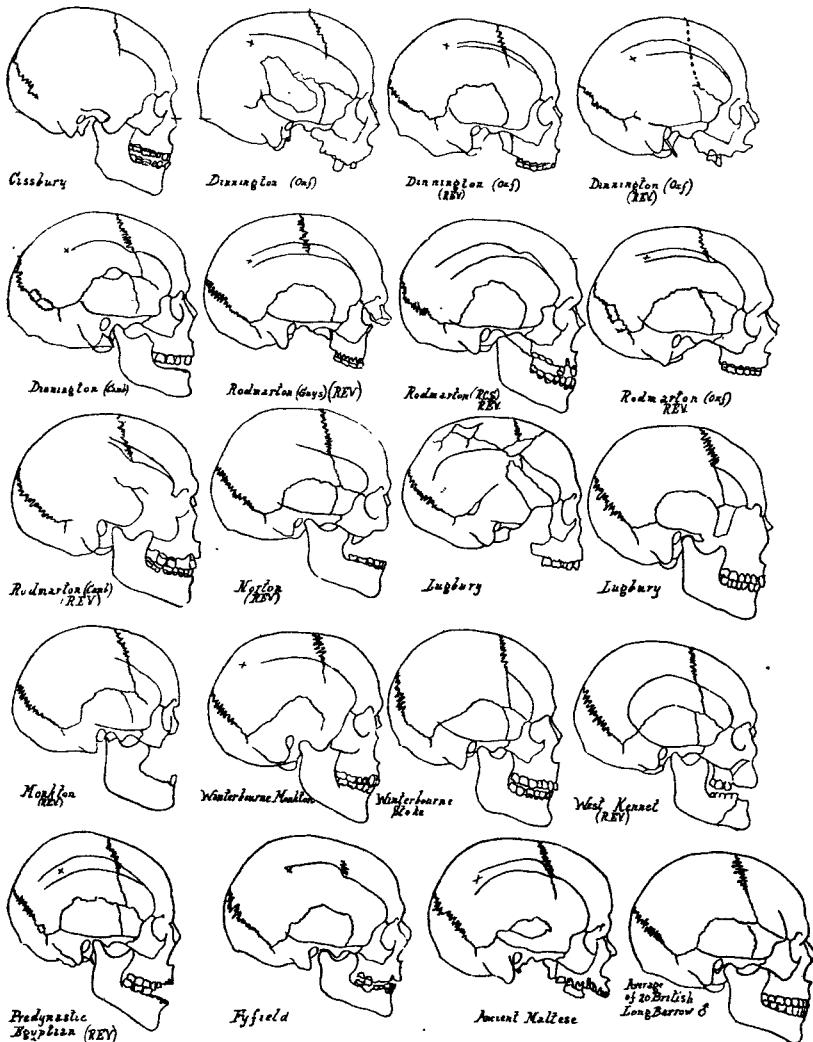


FIG. 2.—NORMA LATERALIS OF LONG BARROW MALE SKULLS.

(REV.) indicates that the contour has been reversed for purposes of comparison. The last figure is a composite of twenty.

hardly possible to avoid reproducing the contour almost exactly. After this, as many points within the contour as are needed, such as the highest point of the orbit, the pterion, asterion, parietal eminence, etc., can have their bearings and distance registered.

It now only remains to get the averages of these angles and distances in all the skulls of the series, when a type contour and other details of the whole may be constructed for comparison with similar details of another series.

The *norma facialis*, or front view, is measured by taking the nasion as zero and recording the various breadths with their distance above or below this point. The dots on Fig. 1 will show the points from which breadths are taken, or, if they are

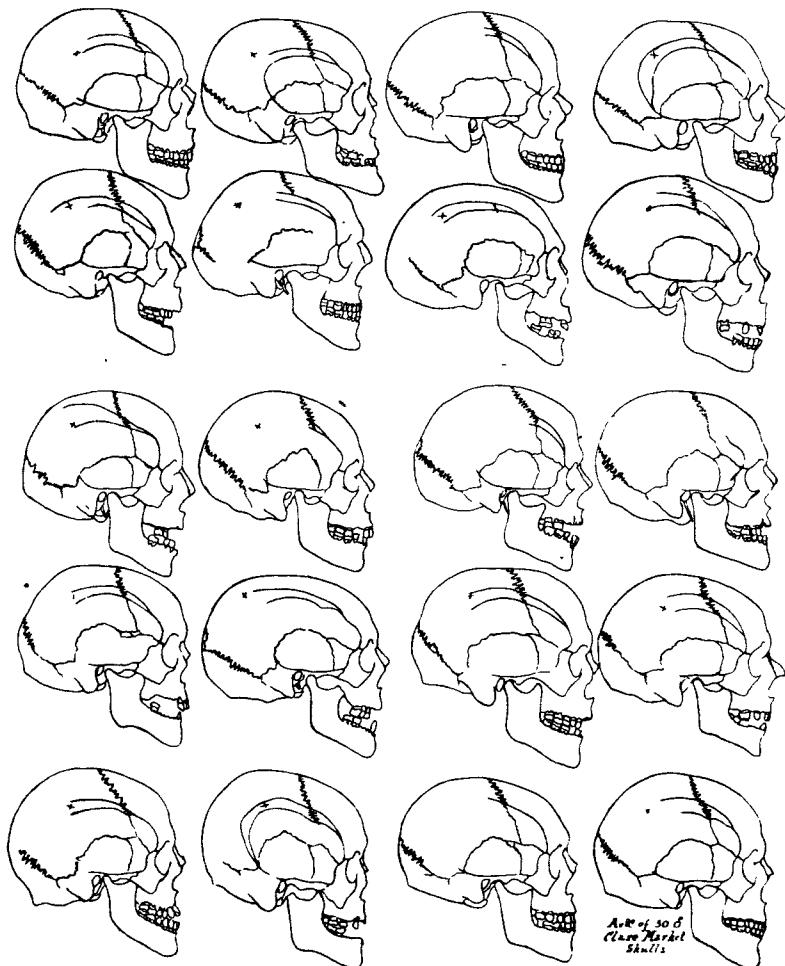


FIG. 3.—NORMA LATERALIS OF 18TH CENTURY MALE LONDONERS FROM CLARE MARKET.

The last figure is a composite contour of thirty.

in the mid line, the distance above or below the nasion. One point, however, needs special mention. It will be seen that breadths are recorded at 20, 40, 60, 70 and 80 mm. above the nasion, and as all the skulls of this series are over 80 mm. above the nasion, no difficulty arises ; but we are here dealing with a homogeneous race of specially high skulls, and in other races it often happens that one or more of the series do not reach 80 mm. in height. When this is the case, Mr. Le Gros Clark

found that a true average may be obtained by taking the width as far below the vertex as the skull is short of 80 mm., and subtracting this width instead of adding it to the sum of the widths at 80 mm.

For instance, let us suppose that skull A is 90 mm. at the vertex and 83 mm. broad at the height of 80 mm., B is 84 and 39, while C is only 78 mm. high. The procedure is to take the width of C at 76 mm. (as much below the vertex, 78, as the vertex is below 80). Say the width here is 15 mm., then the average width at 80 mm.

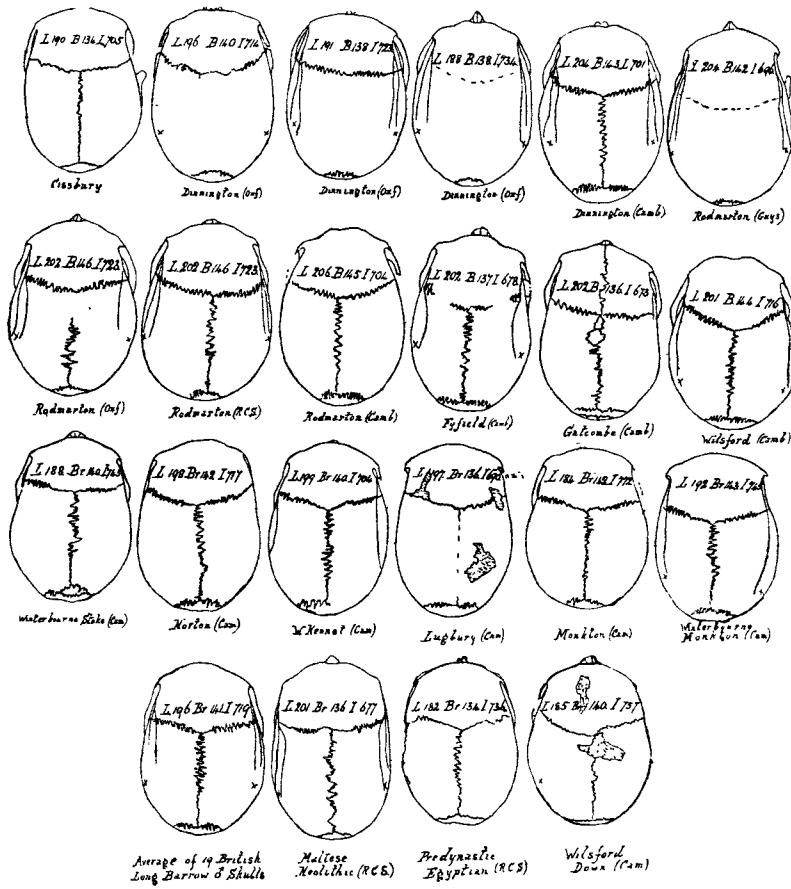


FIG. 4.—NORMA VERTICALIS OF LONG BARROW MALE SKULLS.

The first figure in the last line is a composite of nineteen British Long Barrow skulls.

is 83 for A + 39 for B - 15 for C = $\frac{107}{3} = 36$. I confess that I am not enough of a mathematician to know whether this is correct in theory, but I find that the contour comes out perfectly, and that even the scaphocephaly of Eskimo skulls can be shown on the average contour by its means.

The *norma verticalis*, or top view, has the breadths measured from the most anterior point in the median line at $\frac{1}{4}$, $\frac{1}{2}$, $\frac{3}{4}$ and $\frac{7}{8}$ of the total length, and at other

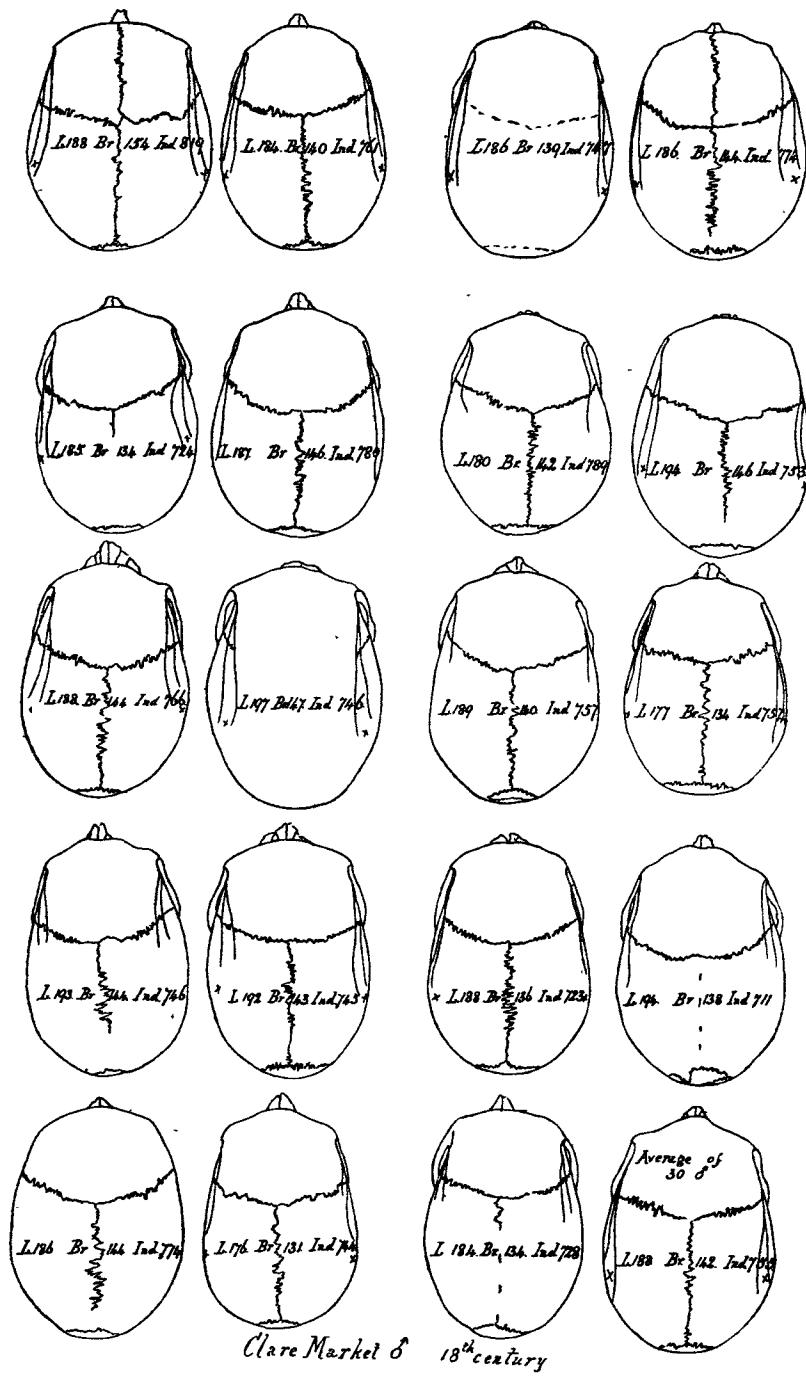


FIG. 5.—NORMA VERTICALIS OF 18TH CENTURY MALE LONDONERS' SKULLS.

The last figure is a composite of thirty.

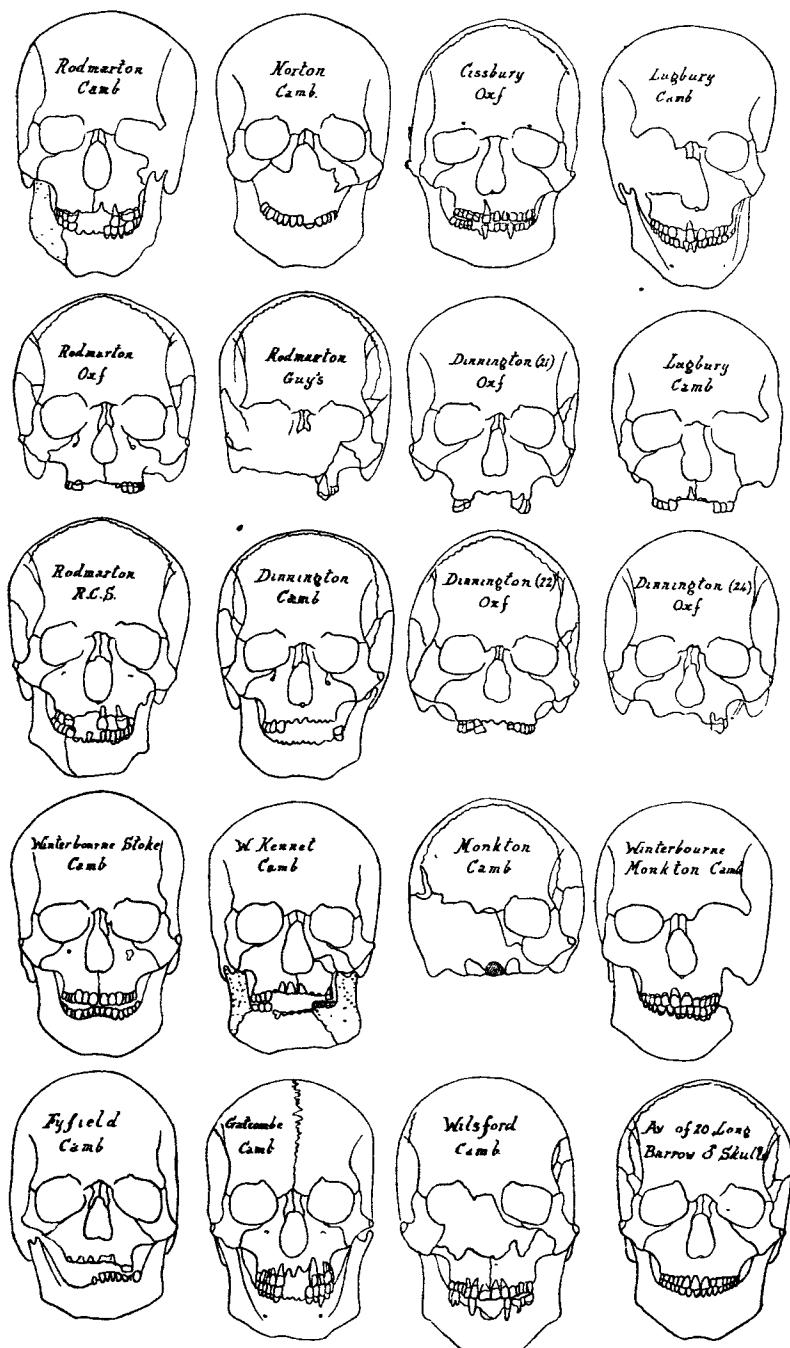


FIG. 6.—NORMA FACIALIS OF LONG BARROW MALE SKULLS.

The first name is the place of burial; the second, the Museum. The last figure is a composite of twenty skulls.

arbitrary points, indicated on Fig. 1, such as the maximal width, the width at the external angular process, the lambda, etc.

As a matter of fact, the labour of taking a good many of these points may be saved because they can be obtained with parallel rulers from the already constructed *norma lateralis* and *frontalis*, but taking them is an additional check on any inaccuracy in drawing or measuring. No craniologist would be content to deduce racial

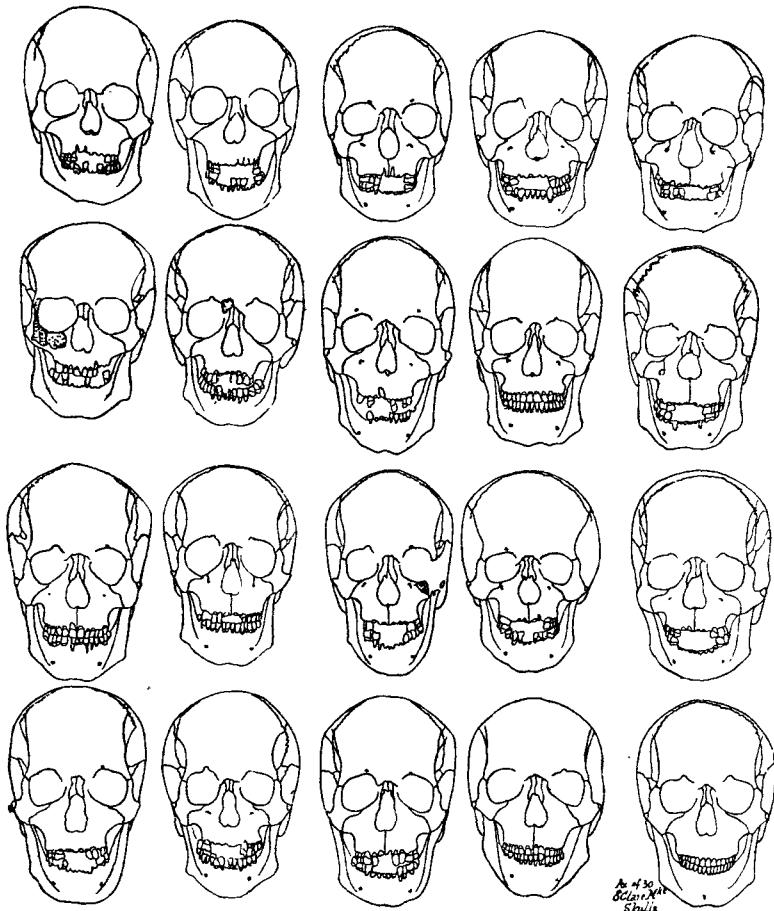


FIG. 7.—NORMA FACIALIS OF 18TH CENTURY MALE LONDONERS FROM CLARE MARKET.

The last figure is a composite contour of thirty.

characteristics from the comparison of these contours alone, but they are very valuable in showing at a glance where the differences in contour or proportions are to be sought and where the skulls should be specially examined.

The ideal of everyone with experience is to have all the skulls of the series orientated in exactly the same way and placed side by side in a row for comparison, but how often can this be done? Certainly not in this case, for no curators would allow skulls of such fragility and value to leave their museums to meet on the same table in

London; so that the only means of comparison is to have all the contours side by side, for the purpose of checking the average contour, and it is possible to have twenty of these contours reduced by photography so as to be included in one picture without obscuring their proportions. This has been done in Figs. 2 to 7, and when these are compared it is possible to get a good idea of the characteristics of these Long Barrow skulls.

It is quite obvious that, taken as a whole, they are long and narrow. Their average length is 196 mm. and their breadth 140 mm., giving a breadth index of 71·7. As these are exactly the same measurements which Prof. Macalister obtained and gave to Dr. Macdonell for publication in *Biometrika*,¹ after examining between 37 and 54 male skulls, it is probable that they will pass without opposition. When we compare them with Dr. Macdonell's Whitechapel skulls, we find L. 189, B. 141, Ind. 74·3; Moorfields, L. 189, B. 143, Ind. 75·5, and College of Surgeons Clare Market series, L. 188, B. 142, Ind. 75·5; and it is obvious that the London skulls are very close together in their indices and markedly wider in proportion to their length than the Long Barrow ones.

In auricular height the Long Barrow skulls are 117 mm., the Whitechapel 114, the Moorfields 114, and the Clare Market 114. Here again the London series are alike and appreciably lower than the Long Barrow.

These are the points upon which Prof. Pearson was relying chiefly when he propounded his discovery of the seventeenth century Londoners being Long Barrow men, and so far he does not seem to have very much to go upon, but it is when the standard types of the two sets of skulls are placed side by side that the marked contrasts appear, and by their sides I will place the types derived from measurements of twenty-four Anglo-Saxon skulls, which is as far as I have got, up to the present, in an attempt to measure and record all the Saxon skulls to which I can obtain access. I need hardly repeat that in all these comparisons only male skulls, or skulls which are believed to be male² are used.

In looking at the full face view the wonderful difference in the orbits between the Long Barrow and the Clare Market skulls arrests the attention at once. In the former they are low and apparently broad, though, as a matter of fact, their breadth is about equal in the two series, while their upper and lower margins are nearly parallel. In the latter they are deep and often have a tendency to be wider externally than they are internally owing to the lower margin being more oblique than the upper. When the Anglo-Saxon skulls are examined it is seen that they agree with the Londoners and contrast sharply with the Long Barrow people in this respect.

Then again the whole face of the Long Barrow skull differs from the other two in being compressed from above downward and widened from side to side. The nasion has come down nearer to the Frankfurt plane and the incisor point has gone

¹ Vol. iii, 1904, p. 243. (I measured only the skulls which had perfect faces.)

² See also Figs. 6 and 7.

up ; in other words the long face, which is regarded as such a distinguishing Nordic characteristic, is wanting, so that these Long Barrow skulls make up their height in the cranial region and lose it in the face. Another point worthy of notice is that in most of these Long Barrow skulls the sides are very vertical and parallel, instead of showing the almost circular convexity of the London, Saxon or Alpine skull, and this is evidently the characteristic to which Prof. Elliot Smith was referring when he described the pre-dynastic Egyptian skulls as being "ill filled."¹

I cannot leave the very important question of the height of the orbits and face without recalling its ontogenetic significance. If the *norma facialis* of an English child at birth—and I presume that this applies equally to children of other nationalities—is looked at it will be seen that the orbits are as low and oblong as, or even more so than, they are in adult Long Barrow faces (see Fig. 9), and the specimen of the

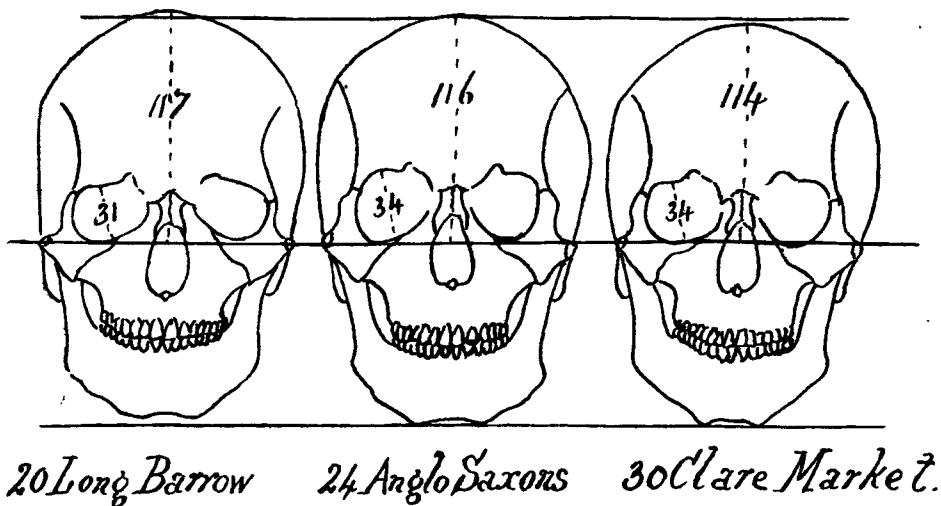


FIG. 8.

Rodmarton child reproduced in Fig. 10 shows, as far as one specimen may, that this condition persists throughout childhood in the Long Barrow race. In an English child of three months, however, the orbits have already begun to assume the deep opening so characteristic of the English and Saxon face, and the process has gone still further by five months ; the whole face has deepened with the deepening of the orbits. The change has occurred chiefly in the *maxillæ* and malar bones, and I cannot connect it with mastication, since it occurs before the incisors are cut ; nor can I refer it to any difference in the teeth themselves in the two races. We must not be led away by the arbitrary orientation of the skull on the Frankfurt plane into thinking that the tops of the orbits have necessarily grown up from that plane more rapidly in the Nordic than in the Long Barrow face, and that the alveolar margins

¹ *The Ancient Egyptians.* Harper Bros., London and New York.

have grown down. It seems to me much more likely that the top of the orbit in each case is the more fixed point and that the malar bone and nasal process of the maxilla grow more rapidly in the Nordic skull, thus deepening the orbit. In addition

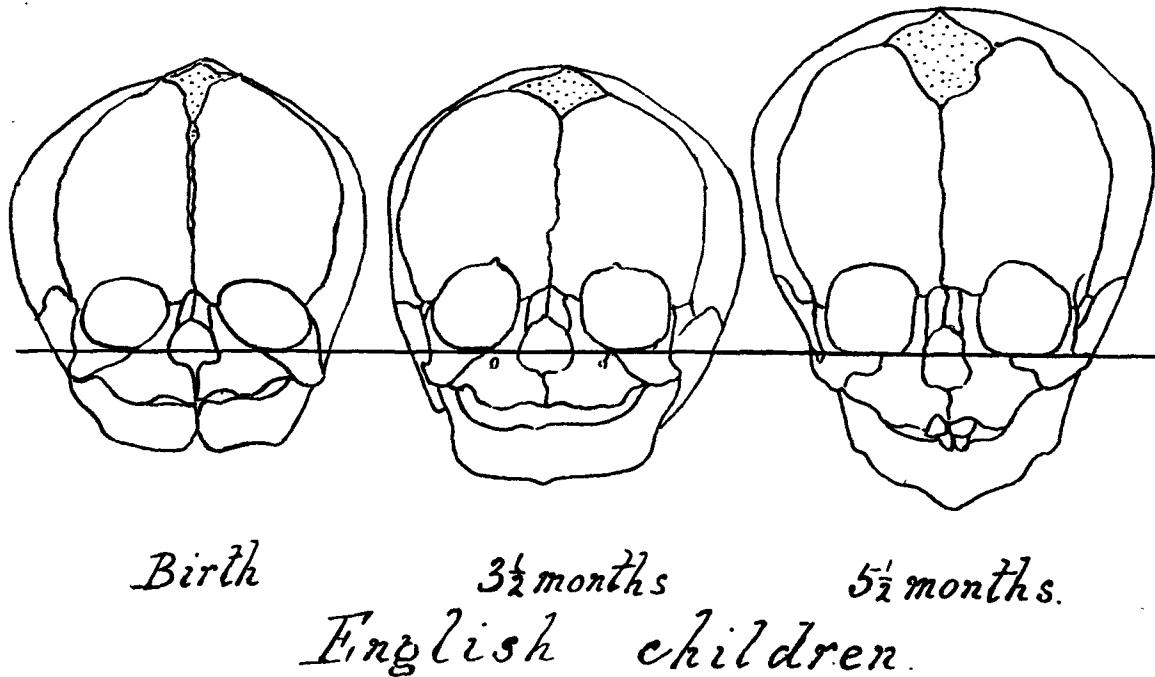


FIG. 9.

to this the body of the maxilla itself deepens more rapidly in the Nordic child, so that, when the Nordic and Long Barrow skulls are orientated on the Frankfurt plane, the upper incisor point of the former is lower than that of the latter.



FIG. 10.

When an average contour of Eskimo skulls is contrasted with the London and Long Barrow it is evident that the same facial change has gone on in them as in the Nordic Londoners, and that they too have the same long face and high orbital openings, and I cannot help thinking that these two changes are correlated and are the result of the narrowing and deepening of the nose to adapt it to a cold climate, ensuring that the air shall be brought as much as possible in contact with the turbinated bones, which act as heat radiators.

Prof. Arthur Thomson has already called attention to the fact that in cold climates the nose is narrow while in warm climates it is broad, and it may well be objected that in the Long Barrow face the nose is as narrow as in either of the contrasted races. Personally I am inclined to think that this is the first stage in an adaptive change on the part of the Mediterranean race to the colder climate of England, because I notice that in the pre-dynastic Egyptian skulls presented to the

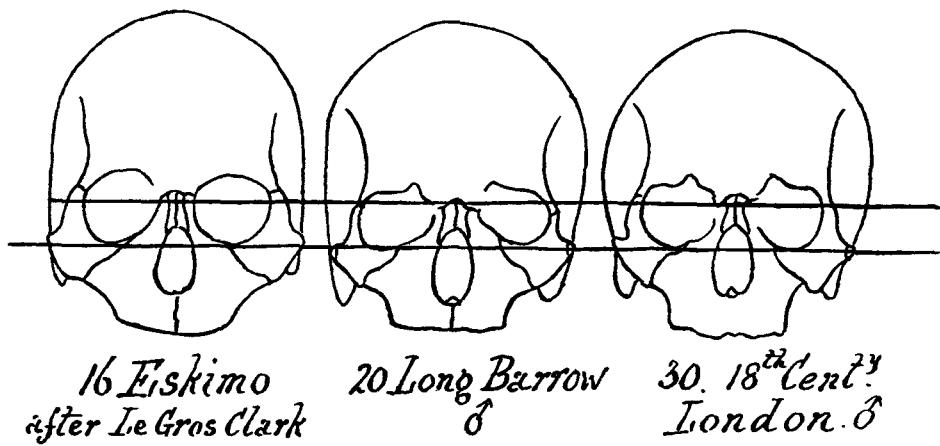


FIG. 11.

Royal College of Surgeons by Prof. Elliot Smith and in the early Maltese skulls presented by Dr. Zammit the noses are distinctly broad (see Fig. 12), but in no other respect have the Long Barrow people altered their racial characteristic skull shape during their long trek from Egypt to England, as far as I can see at present. I am not at all inclined to agree with those who, like Prof. Flinders Petrie, hold that the skull-shape or cranial index of a race can be modified in a few hundred years in any other way than by the race being bred out by another more tenacious of existence in the new surroundings. Adaptive modifications must, of course, and do occur, but all the evidence is in favour of their taking a very long time to do so.

While I am discussing these points of difference in the faces of the Nordic and Mediterranean races I should like to call attention once more to the fact that, in its wide short *nares*, as well as in its short face and low orbital openings the Nordic infant reproduces the Maltese and Egyptian adult face (compare Figs. 9 and 12), and to submit that these are evidences in favour of regarding the Mediterranean as

being nearer the original stock if we are to regard, as some anthropologists do, the Mediterranean and Nordic stocks as having a common ancestry.

When a series of contours of the *norma verticalis* is looked at, a practised eye will notice that the sides are more parallel than in the mixed skulls upon which our anatomical teaching is usually based ; and we can reduce this appearance to definite figures by placing the standard contours of Long Barrow, of seventeenth and eighteenth century Londoners, and of Anglo-Saxons side by side, and noticing the relation of the width of the fore part of the skull to the maximal width in each. It

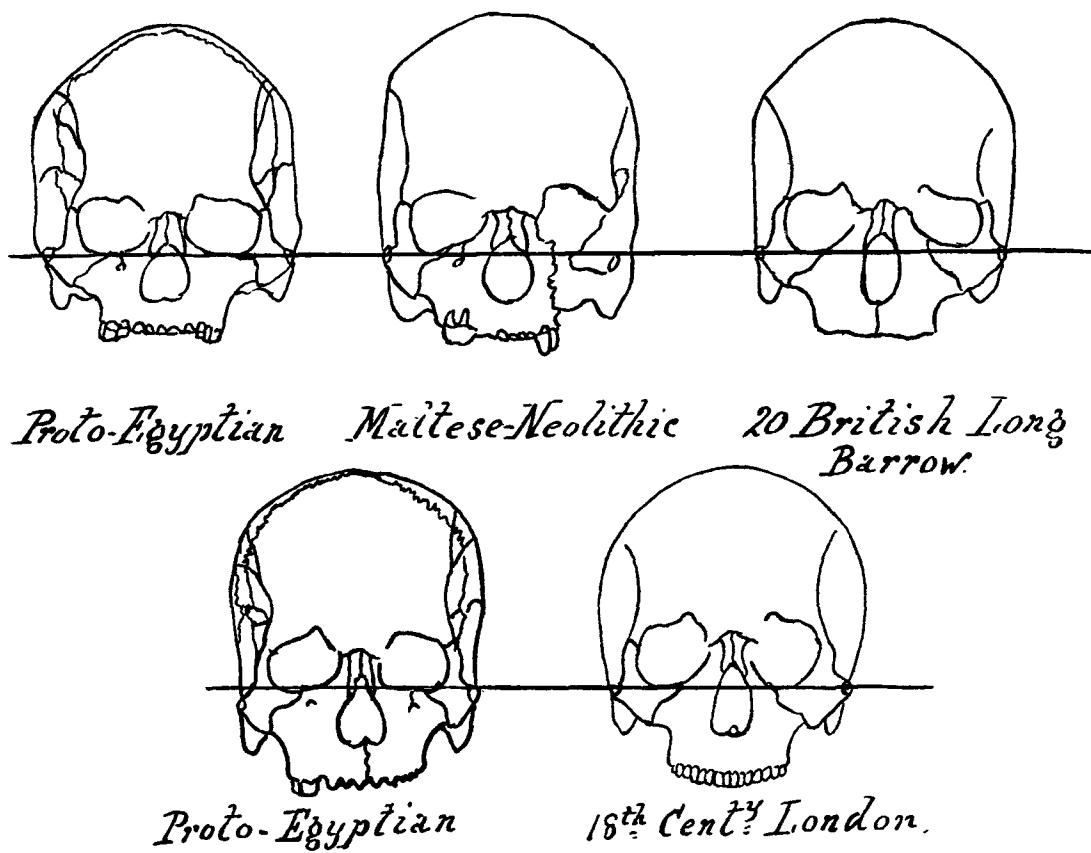


FIG. 12.

will be seen from Fig. 13 that the Long Barrow skull is actually wider than either of the others in the fore part, though relatively narrower in the maximal breadth.

It is sometimes convenient to express these differences of contour in the form of indices, and a fronto-parietal breadth index is easily constructed in the following way :—

$$\frac{\text{Maximal frontal width} \times 100}{\text{Maximal parietal width.}}$$

When this is worked out it will be found that the Long Barrow index is 76·4, the Anglo-Saxon 74·1, and the Clare Market 73·2. Superimposed, in a dotted line, upon the contour of the Clare Market skulls is one of the Whitechapel series, taken by Dr. Crewdson Bennington's method, and reduced to the same scale. His method reproduces a horizontal section rather than a dioptrographic tracing, but the close resemblance of the contours of the two series is an important thing to establish.

The series of vertex views¹ also shows the massiveness and prominence of the zygomatic arches. It is true that in the Lugbury and Winterbourne Monkton skulls these are missing, but it is quite obvious that in not one skull of the nineteen here

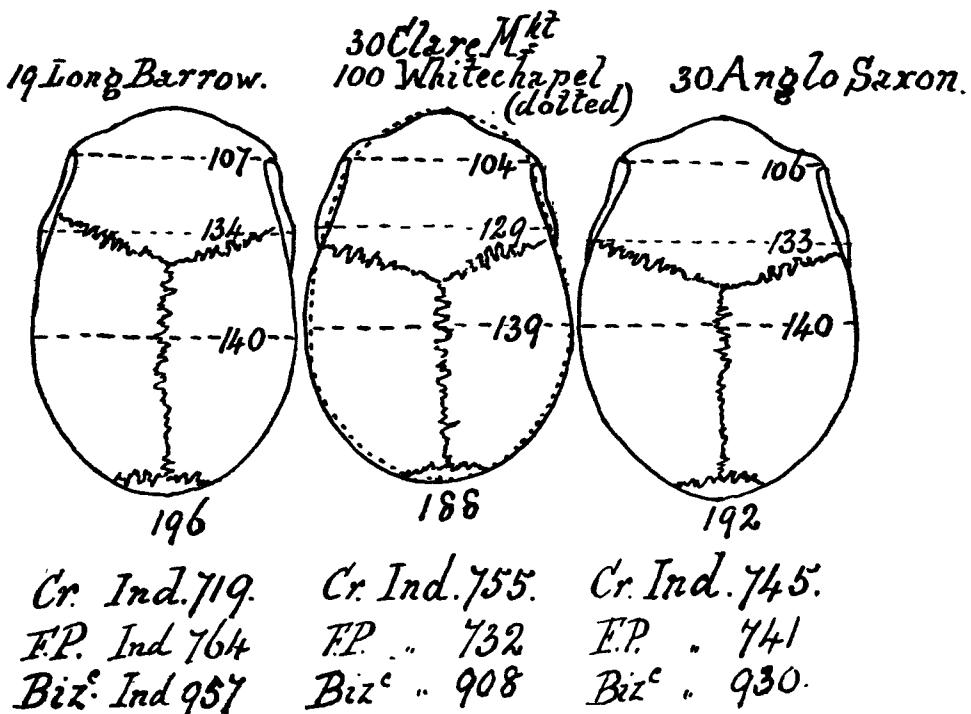


FIG. 13.

shown is there an example of a cryptozygous skull. Among thirty male skulls from Clare Market I found four cryptozygous specimens.

Fig. 13 shows us that compared with the maximal breadth of the skull the bizygomatic index is 95·7 in the Long Barrow, 90·8 in the Londoner, and 93 in the Anglo-Saxon. In other words, the Londoner is, as usual, on the other side of the Anglo-Saxon to the Long Barrow man.

Probably by this time it will have occurred to someone that my series of skulls, twenty in all, is a small one, and that, unless I can prove that it is homogeneous, I have no right to generalize upon it. Unfortunately, when dealing with ancient skulls, we

¹ See Fig. 4.

	Moorfields.				Whitechapel.				Long Barrow.			
	Mean.	Std. Dev.	Coef. Var.	Mean.	Std. Dev.	Coef. Var.	Mean.	Std. Dev.	Coef. Var.	Mean.	Std. Dev.	Coef. Var.
Length ...	189.15 ± 0.57	5.58	2.95	189.06 ± 0.36	6.27	3.31	196	± 1.005	6.73	3.4		
Breadth ...	143.02 ± 0.53	5.31	3.71	140.67 ± 0.31	5.28	3.75	140	± 0.51	3.41	2.43		
Crani. index ...	75.52 ± 0.31	3.00	3.96	74.34 ± 0.19	3.26	4.38	71.73	± 0.554	2.48	3.46		
Auric ht.	113.78 ± 0.47	4.69	4.12	114.59 ± 0.25	4.28	3.73	117.3	± 0.44	2.94	2.51		
Ht. index ...	68.37 ± 0.42	3.47	5.07	69.97 ± 0.20	3.22	4.61	59.8	± 0.34	2.47	4.12		
Upper face ht.	68.12 ± 0.62	4.08	5.99	70.17 ± 0.30	3.86	5.50	67.0	± 0.576	3.57	5.33		
Zygomatic br.	129.00 ± 1.19	4.65	3.60	130.05 ± 0.57	5.57	4.28	134.6	± 0.93	4.58	3.40		

have to take what we can get, and I confess that I was surprised and pleased when I found that as many as twenty male Long Barrow skulls with faces attached were forthcoming. To the ordinary craniologist and anatomist, whose training has been to observe form rather than figures, a careful survey of the contours, side by side—or better still, of the skulls, side by side—will convince him that, as skulls go, we are dealing with a singularly homogeneous series. Prof. Pearson, however, said that the only thing that would satisfy him of the homogeneity of the series would be a low coefficient of variation in different measurements (I hope and believe that I am

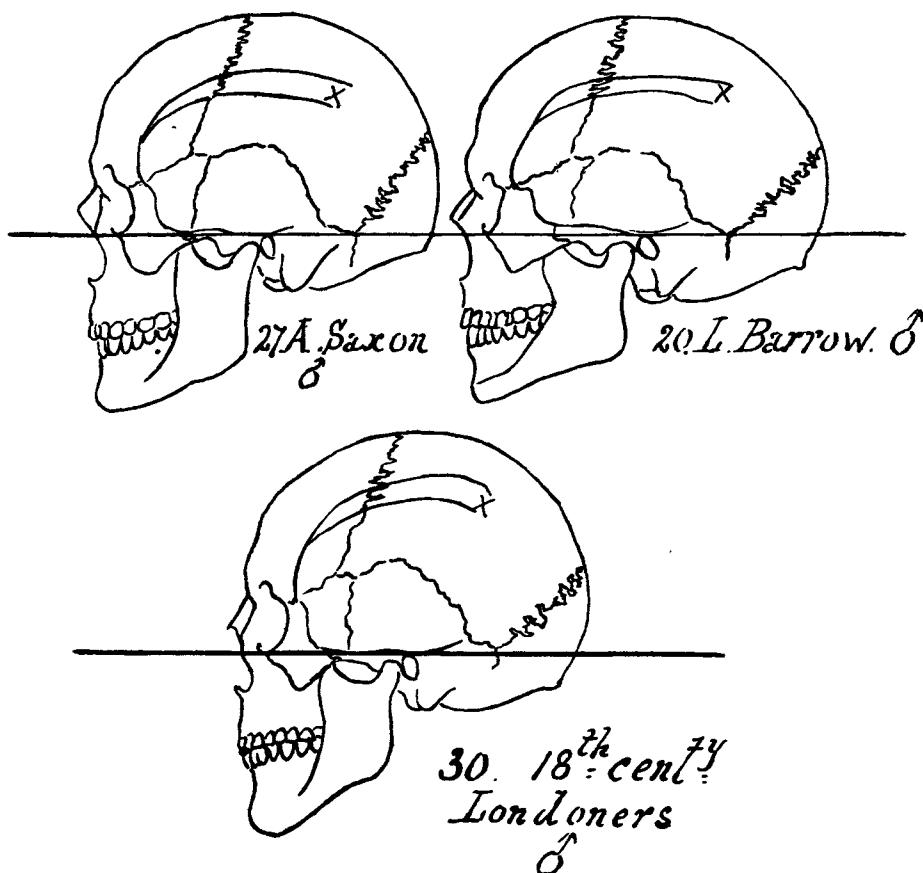


FIG. 14.

quoting his criticism fairly). At Cardiff I knew nothing of coefficients of variation or how they were obtained. Like many of my anatomical colleagues, my training had been for form rather than for mathematics, and I confess to being as innocent of the latter subject as Prof. Pearson is of anatomy. But it is never too late to learn, and I have now mastered the necessary formulæ with the results which I compare in the table (p. 71) with those of the Moorfields and Whitechapel series, which Prof. Pearson considered homogeneous enough to base his startling hypothesis upon.

The figures show that in every case except that of length the coefficient of variation is lower in the Long Barrow skulls than it is in those from Moorfields or Whitechapel.

We have still to deal with the profile view, or *norma lateralis*, of the Long Barrow skull, though it is perhaps not as valuable as the other points of view already studied. Fig. 14 shows the type contours of 27 Saxons, 20 Long Barrow, and 30 modern Londoners from Clare Market, and it is evident that the Saxon resembles the Londoner in his long face, deep orbital openings, delicate zygomatic arch, narrow and deep ramus of the mandible, more prominent mastoid process which comes down to a level with the condyle, less marked occipital bulging and general shortening of the skull from before back.

When the Long Barrow and Clare Market skulls are superimposed on the Frankfurt plane with the auditory meatuses coinciding (see Fig. 15), it will be noticed

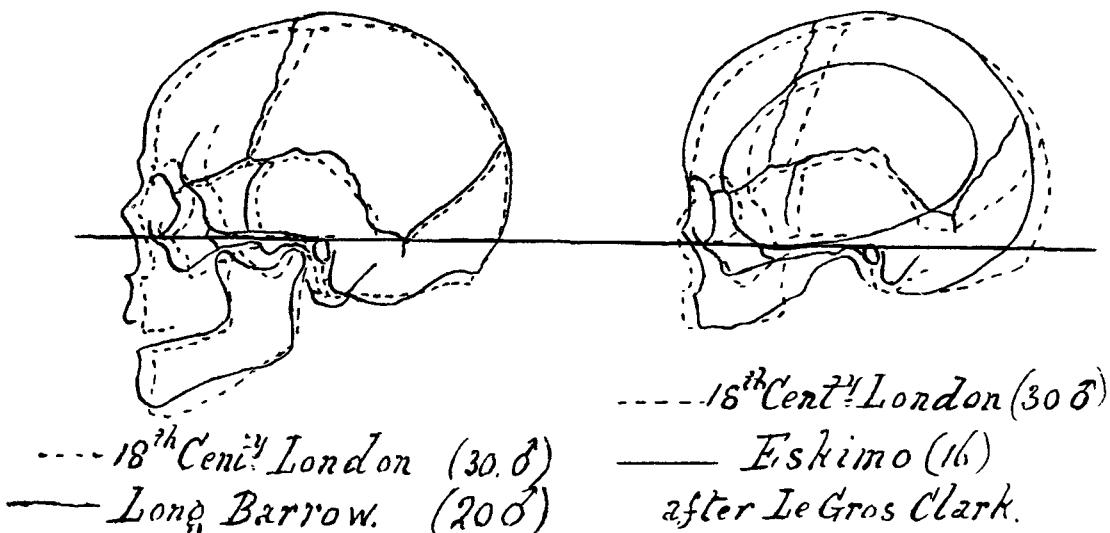


FIG. 15.

that the increased length of the former is all in front of the meatus; that the malar bone and outer part of the orbit has been pushed forward, leading to a flattening of the face and the appearance known as "high cheek bones"; and that the ramus of the mandible is wider, shorter and more splayed than in the Nordic type.

When the same eighteenth century Clare Market skulls are superimposed, in the same way, on the average contour of ancient Eskimo skulls, the same results are more evident still, save that unfortunately the mandibles of the Eskimo were not forthcoming, and these superimpositions make us think that another set of correlated changes are being produced by some factor, in addition to the respiratory ones already noticed, helping to mould the shape of the skull. They are (1) the increased anterior dolichocephaly, (2) the tilting forward of the outer margin of the

orbit, (3) the greater splay and massiveness of the zygomatic arch, (4) the increased width and splaying of the ramus of the mandible, (5) the characteristic flattening of the side of the head (seen in Fig. 11) in the temporal region. These, with the possible exception of the last, about which I am not so sure at present, may all be explained by great development of the temporal and masseter muscles, and even though we cannot demonstrate that the Long Barrow man had bigger teeth or lived on harder fare than his Anglo-Saxon successor, the skull shape once attained would be very permanent. At any rate, it is interesting to notice how the respiratory changes are common to the Nordic and Eskimo, and the masticatory to the Eskimo and Long Barrow man.

I feel that I ought not to leave this question of racial and acquired characteristics in skull shape without putting my present point of view quite clearly before the

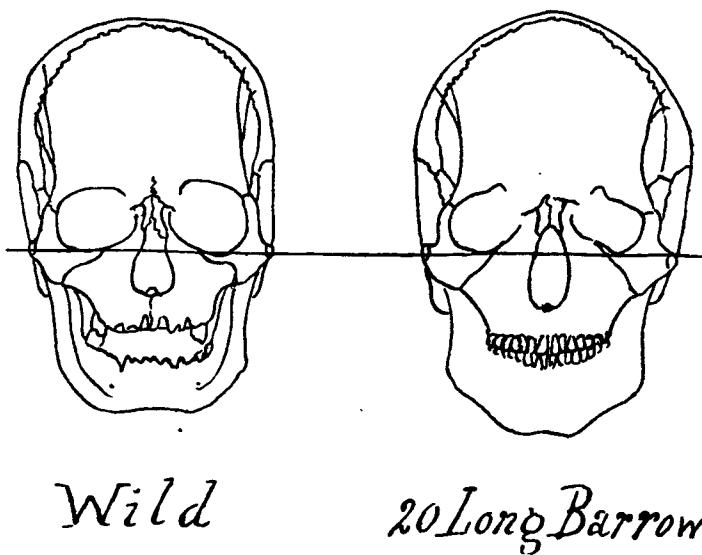


FIG. 16.

reader. It is that the evidence at present at my disposal makes me believe—as I suppose all must believe who really think about the matter—that the shape of the skull is the result of vital or physiological forces, some of which we grasp feebly and others which we do not understand at all as yet, acting on it for a very long time; but that the shape, once established, is very permanent, and that most of its characteristics remain for thousands of years after the race bearing them has changed its habitat. Even when the race has been practically bred out by competing races, better adapted to the changed conditions, the old characters reappear from time to time, sometimes singly but occasionally all together. As an instance of this I would instance the skull of Jonathan Wild in the College of Surgeons Museum (Fig. 16), which is a striking contrast to that of the eighteenth century or even the modern Londoner, but reproduces all the characters of the Long Barrow race. I

think, however, that we should have to look through very many English skulls before meeting another such ; certainly I have never seen one.

Finally I must admit that the skull of the modern twentieth century Londoner has changed from that of the eighteenth, but it is in the direction of increased breadth and shortness, and the change is due, I believe, to admixture with the central European or Alpine race, which in the last two centuries has been pouring into this country in ever-increasing quantities. But that is a subject beyond the scope of this paper.

I must reserve a critical examination of the palate and teeth of these groups for another occasion, but I may mention that I have never yet come across an Anglo-Saxon whose teeth were not ground flat, while in the Long Barrow people they are sometimes ground and at others have the cusps unworn. This, of course, is only a question of the food upon which they lived. Another point which caused me a good deal of wonder was the great frequency in the Long Barrow skull of the *torus palatinus*.

(*Tables of measurements follow.*)

Long Barrow.—*Norma Verticalis.*

	A.P.	Tr.	Tr.	Tr.	A.P.	Ext. Angr. Proc.	Least Frontal Width.	Maxl. Bizyg. Width.	Bregma.	Maxl. Width.	Lambdæ.	Tr.
	Maxl. Length.	1	2	3	4	5	6	7	8	9	10	11
Cissbury	190	111	132	120	90	23	110	26	100	—	72	116
Dunnington	196	121	138	126	102	17	107	20	101	63	70	110
Do.	191	119	136	124	100	17	102	21	95	64	69	117
Do.	188	120	138	127	96	20	104	24	92	56	134?	70
Do.	204	117	141	123	95	21	102	25	94	58	134?	81
Rodmarton...	204	110	138	130	98	22	104	26	95	66	130?	91
Do.	202	111	144	130	100	28	112	30	100	68	140	83
Do.	202	116	143	139	114	22	109	24	94	63	134?	82
Do.	206	115	143	129	102	22	104	27	91	—	—	81
Lugbury	197	116	135	126	98	22	111	27	104	—	—	77
Do.	195	—	—	—	—	—	—	—	—	—	—	—
Monkton	184	111	138	129	100	—	—	—	—	62	136?	72
Winterbourne Monkton	192	115	142	129	103	24	116	30	104	—	—	83
Winterbourne Stoke	188	110	134	126	94	24	107	27	96	61	131	64
Norton	198	118	139	130	99	22	105	25	100	62	130	76
West Kennet	199	118	138	128	102	25	106	32	100	62	134?	75
Fyfield	202	110	134	125	100	19	107	24	97	59	128?	84
Gatcombe	202	113	131	126	94	23	106	27	98	60	131	83
Wilsford	201	113	143	117	98	27	111	30	106	68	145	85
Do.	184	114	137	121	95	24	103	25	98	—	—	82
Average	...	...	196	115	138	127	94	23	107	26	98	62
										134	78	116
										141	188	62.5

LONG BARROW.—*Norma Frontalis.*

LONG BARROW.—*Norma Frontalis*—continued.

	Maxl. Nasal Breadth.	Bimaxy. and Bimastid.	Bituber. and Bimand.	Nas. Sp.	Incisor Point.			Angle of Mand.	Chin. Level.	Midway between Last.	Eye Ht.													
					Upr.		Irr.				R.	L.												
					V.	Tr.	V.				V.	Tr.												
Winterbourne Monkton	(Camb. 124)	...	—	—	43	—	122	62	66	—	50	66	82	84	—	118	118	20	101	70	30	—		
Do.	(Camb. 186)	...	—	—	—	46	96	125	64	59	100	50	68	86	90	100	116	117	—	103	78	31	32	
Winterbourne Stoke	(Camb. 56)	...	40	23	—	—	—	—	—	—	—	104	—	—	—	—	116	117	20	103	72	31	31	
Norton ...	(Camb.)	...	—	—	44	90	—	55	64	67	106	50	68	82	88	105	110	112	—	97.5	72	30	—	
Rodmarton	(Camb. 80)	...	33	23	42	—	126	64	—	—	—	120	—	—	—	—	116	120	34	104	70	30	—	
Do.	(Guy's)	...	—	—	44	—	120	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	
Do.	(Oxford 38)	...	41	21	50	91	130	62	63	—	—	50	66	—	—	—	—	—	—	—	—	—	—	
Do.	(R.C.S. 276.1)	...	41	24	46	94	122	63	64	96	101	50	68	86	90	97	118	116	34	104	67	—	36	
Dunnington	(Camb. 146)	...	38	20	44	93	124	64	64	—	—	59	60	66	80	91	98	108	110	42	100	76	31	32
Do.	(Oxford 21)	...	38	21	48	93	122	64	64	—	—	51	68?	—	—	—	—	—	—	—	—	—	—	
Do.	(Oxford 22)	...	36	22	44	98	125	59	68	—	—	46	64	—	—	—	—	—	—	—	—	—	—	
Do.	(Oxford 24)	...	38	24	44	92	124	57	58	—	—	50	63	—	—	—	—	—	—	—	—	—	—	
Lugbury	(Camb. 86)	...	44	22	44	—	—	—	63	67	96	55	72	85	87	83	118	119	31	103	67	—	32	
Do.	(Camb. 87)	...	37	25	42	—	118	63	67	—	—	46	64	—	—	—	—	—	—	—	—	—	—	
Fyfield ...	(Camb. 39)	...	40	22	50	92?	128	67	52	106	44	68	80	91	100	110	110	20	100	72	33.5	32	—	
West Kennet	(Camb. 138)	...	40	26	49	96	117	68	66	104?	51	68	80	96	107?	111	116	50	106	82	31	30	—	
Wilsford	(Camb. 167)	...	40	24	49	—	—	—	67	—	—	50	60	82	82	—	108	109	—	—	—	31	—	
Do.	(Camb. 170)	...	—	—	49	100	124	68	71	112	52	76	92	100	110	128	130	30	115	72	32	30	—	
Gatcombe	(Camb. 278)	...	41	22	46	90	125	62	63	106	54	70	85	100	104	118	120	30	110	70	32	33	—	
Cissbury	(Oxford)	...	36	23?	42	100	—	58	66	106	48	64	76	86	100	105	106	20	96	80	28	28	—	
Average	...	...	39	23	46	94	123	62	64	103	50	67	83	90	101	114	116	30	103	73	31	31	—

LONG BARROW ♂.—*Norma Lateralis.*

	Point of Chin.	Lower Incisor.	Upper Point.	Nasal Spine.	Tip of Nasal Bone.				Nasion. Glabella.				Ophryon.				Frontal Eminence.				30°				Bregma.			
					A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.		
1. Cissbury...	134°	121	122°	110	112°	108	106	106	—	—	77°	102	71°	112	63°	113	56°	118	120	18°	121							
2. Dinnington	...	—	—	—	115	101	105	98	83°	98	74	95	67	104	63	105	56	114	127	11	126							
3. Do.	...	—	—	—	115	97	105	97	81	96	75	92	69	101	61	104	53	112	120	14	119							
4. Do.	...	—	—	—	115	94	105	94	88	100	74	93	71	95	63	102	62	104	53	113	121	9	123					
5. Do.	...	135	119	124	105	114	100	106	97	86	100	74	92	69	106	73	113	66	113	56	122	131	11	126				
6. Rodmarton	...	—	—	—	—	—	—	—	—	—	87	112	78	106	73	113	66	116	55	121	128	13	127					
7. Do.	...	—	—	—	—	—	110	101	103	85	111	74	104	71	112	61	116	55	121	128	13	127						
8. Do.	...	138	120	124	113	113	105	105	104	87	111	76	106	73	114	64	118	57	125	130	16	129						
9. Do.	...	140	125	126	112	115	110	100	106	84	105	78	104	74	112	66	113	55	122	124	16	124						
10. Lugbury	...	—	—	—	112	101	104	94	—	—	75	93	71	99	62	102	49	111	119	10	121							
11. Do.	...	140	120	127	106	116	102	109	101	85	104	77	100	71	104	64	108	54	116	124	14	126						
12. Monkton	...	137	110	127	90	—	—	—	—	—	—	73	90	67	98	62	100	49	112	119	12	120						
13. Do.	...	140	121	128	106	116	104	108	101	85	102	77	100	72	110	66	113	60	118	125	14	121						
14. Winterbourne	...	134	123	125	104	114	103	104	99	84	102	73	94	69	102	62	106	52	118	124	17	128						
15. Norton	136	119	122	108	—	—	—	—	82	102	76	100	72	108	65	110	55	121	126	14	124						
16. West Kennet	...	135	122	122	106	113	105	—	—	80	104	76	102	71	108	63	109	54	115	116	15	118						
17. Fyfield	132	109	121	97	110	99	98	96	79	108	72	100	66	109	59	111	48	120	126	10	126						
18. Gatembe	...	134	132	123	117	111	112	105	112	84	108	75	103	71	110	67	110	57	118	125	13	122						
19. Wilsford...	...	141	133	131	118	107	107	107	99	—	—	76	104	72	112	64	112	51	125	127	12	126						
20. Do.	137	110	124	101	109	92	102	86	84	94	71	86	65	94	59	98	50	106	112	5	118						
Average	...	137	120	125	106	113	102	104	99.5	84	103	75	98	70	106	63	108	54	117	123	13	125.5						

LONG BARROW ♂.—*Norma Lateralis*—continued.

	360°	340°	Lambda.	Occipital Point.	Inion.	Opisthoton.	Mastoid Tip.	Occipital Condyle.	Angle of Mandible.	Fronto Malar Suture.	Top of Orbit.	Bottom of Orbit.
	D.	D.	A.	D.	A.	D.	A.	D.	A.	D.	A.	D.
1. Cissbury...	122	121	316°	103	297°	92	273°	61	237°	61	206°	18
2. Dinnington	125	127	314	124	295	111	276	98	245	46	214	29
3. Do.	122	124	308	116	289	110	270	85	233	41	201	26
4. Do.	126	125	315	118	300	111	276	85	238	40	212	26
5. Do.	124	125	313	120	290	113	267	89	240	47	210	26
6. Rodmarton	126	127	305	112	295	106	270	83	240	36	202	24
7. Do.	124	124	311	111	294	104	272	82	241	36	209	30
8. Do.	129	127	309	111	297	103	268	74	240	31	210	23
9. Do.	124	122	314	114	294	105	—	—	—	—	210	27
10. Luggbury	121	123	306	116	291	112	274	96	—	—	200	20
11. Do.	126	128	309	113	295	105	277	89	233	43	205	29
12. Monkton	121	122	308	110	294	104	275	76	249	45	207	21
13. Do.	118	117	312	105	288	94	265	76	227	39	198	22
14. Winterbourne	128	126	322	118	288	100	275	79	250	46	201	25
15. Norton ...	124	126	307	110	293	104	268	81	243	36	209	18
16. West Kennet ...	120	124	310	113	293	105	270	84	247	44	210	26
17. Fyfield ...	127	128	309	119	292	109	274	87	249	39	198	20
18. Gatcombe ...	122	125	306	111	293	104	264	76	230	44	196	26
19. Wilsford... Do. ...	123	124	306	106	288	102	265	82	230	46	204	24
	117	120	302	107	286	102	272	92	234	54	206	23
Average	123	124	310	113	294	105	271	83	239	43	205	24

24	181	27	170	57	72	81	69.5	96	81
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LONG BARROW ♂.—*Norma Lateralis*—continued.

	Antr.	Postr.	Steph-	Upper	Squamae.	Parietal	Squamo	Asterion.	Width	Emin-	Lower	Jugal
	Pterion.	Pterion.	anion.	Temp.	Bridge.	Eminence.	Mastoid	Angle.	of Ramus.	entia	Molar	Point.
	A.	D.	A.	D.	A.	D.	A.	D.	D.	Articu-	Point.	D.
1. Cissbury...	...	49°	66	—	—	—	—	—	—	—	—	—
2. Dinnington	...	—	—	37°	57	23°	90	101	302°	42	286°	128°
3. Do.	...	—	—	25	52	21	87	98	298	44	56	69
4. Do.	...	41	60	29	57	21	87	343	91	300	52	—
5. Do.	...	42	66	30	60	26	87	—	338	92	313	—
6. Rodmarton	...	48	62	41	54	23	88	50	338	90	305	33
7. Do.	...	42	68	26	60	24	92	100	57	345	98	294
8. Do.	...	—	—	41	60	30	95	100	61	342	88	297
9. Do.	...	—	—	—	—	—	—	97	52	344	86	—
10. Luggbury	...	—	—	43	54	33	80	—	—	289	43	—
11. Do.	...	55	64	—	—	—	—	82	50	—	291	32
12. Monkton*	...	43	60	29	53	24	83	—	53	346	103	309
13. Do.	...	—	—	—	—	—	—	—	54	344	95	308
14. Winterbourne	...	48	61	39	56	29	92	—	48	332	97	—
15. Norton	55	60	49	56	29	79	—	54	—	—	—
16. West Kennet	...	49	62	38	56	30	82	—	47	—	—	307
17. Fyfield	—	—	—	—	—	—	—	52	—	—	284
18. Gatcombe	...	43	63	40	56	25	80	94	54	346	94	292
19. Wilsford...	...	42	72	34	67	32	82	95	62	330	101	310
20. Do.	—	—	—	—	30	65	—	44	330	88	306
Average	...	46	64	37	57	27	84	95	53	340	95	302

NOTES ON THE SUK TRIBE OF KENIA COLONY.

By JUXON BARTON.

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I.—DIVISIONS OF COUNTRY, PEOPLE AND POPULATION.

THE Suk conveniently, but not accurately, divide into Agricultural and Pastoral Sections ; the Pastoral Sections have received and are receiving a large influx of Agricultural Suk, who have attained cattle by the bride-price of their female relations and by other means, some doubtful : poor and indolent young Agricultural Suk often act as herds to their richer tribesmen, and are all but adopted by them, while the rich pastoralists welcome additions from the Bantu Bagishu and the Nandi-like Sabei, and will if they can purchase young children from those tribes ; this is dictated by the amount of work which large herds of stock demand in a barren inhospitable country.

The Agricultural or Hill Suk may be said to present the original physical type and to speak the purer dialect ; they are generally regarded by all Suk as the repositories of tribal tradition.

The Agricultural or Hill Suk are known as the *Pi-pa-pagh*, the people of flour, and inhabit the escarpments and their foothills ; the Pastoral Suk are known as the *Pi-pa-tich*, the people of cattle, and eddy about the plains and infringe upon the grazing of the Turkana and Karamojo ; they are almost as nomadic as the Turkana, who are the most nomadic race in East Africa.

The Agricultural and Pastoral Suk divide into the following Sections, which were primarily geographical :—

Agricultural :—

1. Cheptulel, inhabiting the escarpment bordering on Chebleng or Endo country and the Masol plains.
2. Kurut, inhabiting the country about the Wei-Wei River, Maerich, Bongo and Masol.
3. Magan, inhabiting Chachai and part of Sekerr.

Pastoral :—

4. Kasauria, inhabiting the Chemerongi Hills (at Tenduguit and Chemerongit). Korosi, Ribko and Masol.
5. Kabcheriko, inhabiting the Chemerongi Hills (at Kirogoh) and formerly Chepkariat and Tirioko.
6. Kiplegit, who have spread almost entirely amongst other sections.
7. Mnage, who inhabit the Mnage Hills.
8. Sekerr, inhabiting the Sekerr Hills from Chachai to the Turkwell Gorge at Ramai and up the Turkwell River.

Primarily these sections were geographical, but inasmuch as stock is a fairly recent acquisition, and one implying food, drink, clothing, gilt-edged security and heirloom to the Suk, its possession is the aim of existence, and as cattle do not do well in the hills these sections have intermixed to a great extent.

The Agricultural Cheptulel living on most inaccessible precipices are probably the original nucleus of the Suk ; while the Kasauria and Kabcheriko are those who have come most in contact with the Turkana and Karamojo, and while there is no question of their not being Suk, they have adopted a Turkana-Karamojo culture, have abandoned circumcision, have intermarried with the Turkana and Karamojo, and have formed an argot of their own, very like the languages of those tribes, and affect to despise their " humble " origin.

Inquiry did not produce the meaning of the names of the various sections, but as they are primarily geographical¹ that explanation will suffice, but there is some evidence that these geographical sections have a few sub-divisions ; the Kasauria, for instance, have a sub-section, the Katamas (the drunkards) ; this again, as the liquor is mainly hydromel, implies plentiful honey, and so suitable country and foliage.

These sectional divisions are in no way totemic.

The first description of a Suk, after his name, is then his section and possible sub-section ; next comes his clan and sub-clan. The Suk have a number of totemistic clans (*or*, pl. *orten*),² and these clans are found in all the sections of the tribe in varying degrees. Each of these clans have recognised elders where the particular clan is found in any number, but it does not seem that there is one elder for the whole clan.

¹ As with the Nandi.

² Lit., a road.

The clans are as follows :—

Clan.	Sub-divisions of Clan.	Totem.	Special Observances, &c.
1. Terit ...	Kachepkai, Kabatet, Kabater, Kapkwaga, Kamiru, Kasiro, Kaboret, Kamakam, Kasongo, Kamulicha, Kabarwas	Thunder and rain (<i>Ilat</i> and <i>Rob</i>)	A candidate for circumcision from this clan is operated upon before any other. This clan is numerous in Cheptulel where it would seem is found the original nucleus of the Suk. Persons of this clan making a feast in the dry season are thought to bring rain : when rain is awaited with anxiety a child male or female of this clan is immersed in the spring. Cattle ear brand, broad cut ; cattle body brand, line from right side of nose under right foreleg to right haunch.
2. Sopan ...	Kaptano, Katula, Kakkarian	Elephant (<i>pelion</i>) ...	Permission to kill the elephant should be sought by others from a member of this clan. Failing a candidate for circumcision from the Terit clan a member of this clan takes precedence. Cattle ear brand, three cuts near apex of both ears ; cattle body brand, circle on right side.
3. Oro ...	Kablegen, Kangaremwa, Kabarsich, Kabetor, Kaptamur, Kapelion, Kapsogon	Iguana or large tree lizard (<i>maratas</i>)	The skin of this lizard is used as a pad through which giraffe hair is threaded and worn as an ornament ; this decoration is not used by this clan only, but permission should be sought by others from a member to kill this particular lizard. This clan is given precedence after the first two at circumcision. Cattle ear brand, right ear one cut, left ear two cuts ; cattle body brand, line from hump to knee of right foreleg and three horizontal parallel lines on right flank.
Sotot or Sotin	Kabliman, Kabarwala, Kaptumega, Kachemirian, Kakisan, Kasowan, Kakamuk, Kakeril, Kamiren, Kachekochop	Sun (<i>asis</i>) and <i>Kanierpet</i> bird	There appears to be no special observance connected with the sun by this clan, but it is definitely associated with this clan. A bird, named the <i>Kanierpet</i> , with a cry "Herko Kapsot," may not be killed by this clan, and the imitation of this cry is an exclamatory used by members of this clan ; part of the circumcision ceremonies of the Suk

Clan.	Sub-divisions of Clan.	Totem.	Special Observances, &c.
Sotot or Sotin —continued.	—	—	involves the shooting of birds with bows and arrows, but this bird is forbidden to all at that time. Failing a member of the first three clans this clan takes precedence at circumcision. Cattle ear brand, narrow cut in both ears ; cattle body brand, three lines from hump to navel, cross on right flank.
5. Talai ...	Kamingen, Kachepto, Kamurgo, Kachendi, Kasokoper, Kakitei	Baboon (<i>maiyo</i>) ...	This clan claims to kill and eat the baboon to the exclusion of other Suk. Cattle ear brand, half the ear is cut off ; cattle body brand, not ascertained.
6. Rii ...	Kachepo, Kaghi, Kaksian, Kapsahak	Coney or rock rabbit (<i>kaner</i>)	This clan claims to kill and eat the rock rabbit to the exclusion of other Suk. Cattle ear brand, edges of both ears a series of cuts ; cattle body brand, not ascertained.
7. Sigogh ...	Kaptagar, Kabara, Marich, Kakoboch	Bees (<i>Sakam</i>), rhinoceros (<i>kapau</i>)	Bees should not be killed by anyone under pain of this clan's wrath ; the rhinoceros may be killed in self-defence, but otherwise by this clan's permission. The first sub-clan is peculiar to the Wei-Wei River, the second to Cheptulel. Cattle ear brand, four broad cuts in both ears ; cattle body brand, not ascertained.
8. Kaptoi-yoi	Kakaher, Kamejit, Kasia, Kamerikeu	Buffalo (<i>soyin</i>) ...	Permission to kill the buffalo should be asked of this clan. Cattle ear brand, points of both ears cut off and two cuts in sides of ears ; cattle body brand, three lines on left side.
9. Logene	Kakopei, Kaniongi, Kametin, Kakoro, Kapkon	Frog (<i>kimnyegen</i>) ...	The frog may not be killed or eaten by any Suk and this clan especially protects it. The clan is numerous near the Wei-Wei River, as are frogs. Cattle ear brand, cut on point of ear ; cattle body brand, two circles right flank to navel.
10. Kamoi ...	Kasera, Kachesundu ...	Smiths' bellows (<i>koban</i>)	This is a small clan, and found in the Sekeri mountains. It is said to be composed of smiths who emigrated from Nandi country. There seems to be no special observance. Cattle ear brand, two cuts near apex of both ears ; cattle body brand not ascertained.

Clan.	Sub-divisions of Clan.	Totem.	Special Observances, &c.
11. Saniak	Kamenam, Katoinan, Kakosom	Small red ant (<i>pirech</i>)	No special observance would connect this clan with its totem. Cattle ear brand, both ears cut off at roots; cattle body brand not ascertained.
12. Silegot ...	Katabiton, Kanyalet, Kapchombus	Hawk (<i>sirere</i>) ...	The hawks haunting the Suk hills may not be killed by any Suk, and the shooting of them by Europeans is much disliked. Cattle ear brand, left ear cut in half; cattle body brand, large circle right side.
13. Tingo ...	Kapogh, Kasunguru, Kachepkok, Kabaiyos, Kachebos	Hyæna (<i>kawagh</i>) and monkey (Sykes' ? <i>warain</i>)	Permission to kill the hyæna and this monkey should be sought from this clan. Cattle ear brand, both ears cut in half; cattle body brand, not ascertained.
14. Sogo ...	Kapteyo, Karima ...	Lion (<i>ngotin</i>) ...	The lion may be killed in self-defence by the Suk, but otherwise permission to kill should be sought from this clan. Cattle ear brand, small cut from the points of both ears; cattle body brand, not ascertained.
15. Tol ...	Kabieondo, Kamenin, Kasiga, Kamusar, Ka- karan, Kapkor	Jackal (<i>chepkono</i>) ...	The prohibition against killing the jackal is strict upon all Suk, unless this animal has been killing goats. Cattle ear brand, both ears cut in half; cattle body brand not ascertained.

The above list is probably not complete. Members of the same clan may not intermarry or cohabit, and there is an objection to taking a wife from a clan with which there has not been previous intermarriage. Husband and wife never use each others' proper names when speaking: thus A of the *Sotot* clan and the *Kabliman* sub-clan is called *Kabliman* by his wife B of the *Kamoi* clan and the *Kasera* sub-clan, and she is called *Chebasera*¹ by him: the reason for this man and wife prohibition is said to be the impropriety of a husband or wife using the names which their mothers gave them. A man when speaking of his clan and sub-clan prefers to prefix the feminine *Cheb-*, possibly a relic of matriarchy.

As regards the clans proper the Suk seem to have no idea of their origin or of the meaning of the words designating the clan; but as regards the sub-clans they are manifestly family groups; the prefix *ka-* is found throughout with the meaning "people of—" and gives such translations as "the elephant people," "the water people," much as a member of the Jones family might speak of the Lancashire Joneses.

¹ *Cheb*, a feminine prefix.

Totemic prohibitions seem to have been strict in the past, but they are not binding to-day, save in the special instances noted; there is, however, a definite, if playful, regard for the totem.

The Suk possess a system of consecutive recurrent age grades associated with circumcision, and known as *pen*; of these there are said to be twelve—ten are recorded, three have two names. They are totemic and are as follows:—

Age.	Totem.	Special Observances.
1. Kimnyarikil, i.e., the newly born	?	?
2. Maina, i.e., ?	Zebra (<i>chemmarmar</i>)	This age grade may not kill the zebra and quarrel with those who do so without their permission. The zebra is anathema to most pastoralists.
3. Juma or Jumoi, i.e., the renowned	Giraffe (<i>akori</i>)	This age grade may kill or eat the giraffe and would refuse permission to others to do so.
4. Sombai, i.e., the fortunate	Bees (<i>sakam</i>)	When this age grade was circumcised there was much honey, and the killing of bees when the honey was taken was resented by this age grade.
5. Sowa, i.e., ?	Impala (<i>chemel</i>)	This age grade considers it has the sole right to kill and eat the impala.
6. Korongoro, i.e., a species of ant	Pig (<i>mulunjo</i>)	No special observance noted; probably the grade age would deny the eating of pig to others.
7. Kablelach or Kipkomet, i.e., ?	Monkey (<i>warain</i>)	This age grade usurps the killing and eating of the monkey. The Agricultural and Pastoral sections of the Suk are said to have quarrelled over the designation of this age grade; the Agricultural preferring the former name, the Pastoral the latter.
8. Mergutwa, i.e., the gluttons	Guinea fowl (<i>mangarach</i>) Monkey (<i>warain</i>)	This age grade would usurp the killing and eating of the guinea fowl and monkey. The word <i>Mergutwa</i> apparently means the portions of porridge adhering to the cooking vessel. It is said a few members of this age grade may now (1920) be living.
9. Nyonge or Norgen, i.e., ?	Zebra	The second batch of candidates for circumcision of this age grade are said to have refused the designation <i>Nyonge</i> and to have insisted upon <i>Norgen</i> ; the zebra totem of this age is said to have been requested by the <i>Maina</i> age grade and to have been granted, no totem being substituted.
10. Siroi, i.e., the Dik-diks	Dik-dik (<i>siran</i>)	The eating of this animal is lawful to all Suk, but this age grade would usurp the killing.

These age grades are recurrent; the present is the *Juma* or *Jumoi*; in 1918 some 400 youths were circumcised as of this age and the circumcised of 1919 have the same age.

The seniors of each age are called *Chenokopir*, the next senior *Kamasiap*; the juniors *Kapkesir*¹ during the circumcision ceremonies.

¹ See Hollis, *The Nandi* (Clarendon Press), p. 12.

Similar consecutive and recurrent age grades are found amongst the Chebleng, Kamasia and Nandi tribes, but so far have not been described as totemic. The resemblance in designation of the Suk age grades to the Nandi and Kamasia age grade is almost exact ; all three tribes have an impress of Nilote and Hamite upon the Hill tribes or Anderobo in their racial composition.

The question of "totemism" and "taboos" is a vexed one ; first it has been assumed that an American-Indian word will suffice to explain phenomena appearing in America, Australia, Melanesia, and Africa ; next that these phenomena have a common basis ; the fact that it is possible for a people or association of peoples to be capable of incepting their own customs and observances seems to have been disregarded ; it would seem that "totemism" is a misnomer in Africa, and there is a need for another word or words.

II.—SOCIAL DIVISIONS.

The male social divisions amongst the Suk are :—

1. *Karachona*—boys.
2. *Muren*—full-grown men.
3. *Poi*—old men.

The *muren* and *poi* divide into the circumcision age grades given above.

The female social divisions are :—

1. *Tipin*—girls.
2. *Meror*—circumcised girls.
3. *Taran*—brides.
4. *Koru*—wives.
5. *Kokan*—old women.

Women do not belong to the male circumcision age grades.

The practice of an agricultural or a pastoral life is rapidly becoming a social division, and given an immunity from cattle disease the pastoralists would increase in number and ultimately the agriculturists would be regarded as outcasts or else become helots.

The smith as with other tribes—the Somal, Galla, Masai, Nandi—occupies a peculiar social position, but is by no means an outcast.

Slavery, as such, does not exist ; captives, *metuarin*, do not become slaves, but are kept as members of the family of the captor.

III.—RELIGIOUS BELIEFS.

The Suk may be said to believe in an Unknown God ;¹ that there is a belief seems certain, but it baffles description not only to the European but amongst themselves. *Asis* (the sun)² is a term used to denote what a European might designate "God" ; a

¹ Cf. Beech, *The Suk*, p. 19.

² Cf. Hollis, *The Nandi*, p. 40.

Suk youth reproved for having put a European's rifle down and for having forgotten the place, on being told to ask God for some understanding, lifted his hands in a supplicatory fashion to the sky and said, “*Asis*, give me a little thought.” *Tororut* (the heavens) and *Ilat* (thunder and lightning) are in some fashion associated with supplication and with fear. A certain small plot of tobacco, apparently growing wild, unintended and untouched, is always unviolated, as it is “the garden of *Ilat*.” Again, a certain aerated spring of water bubbling from the rocks is called “the water of *Ilat*;” a harvest dance is called *Ny'ilat*.

Tororut is invoked with outstretched hands in cases of famine and drought. The moon (*arawa*) on the wane is similarly implored to send aid with the new moon; as the upper horn of the new moon lies over Turkana, Karamojo or Suk country, so is fortune thought to follow the tribe.

There is no trace of sun worship.

An order of precedence of these component beliefs is *Ilat*, *Asis*, *Tororut*, and by far the least *Arawa*; this order is not based upon any statement by the Suk.

There is no ascertainable belief in a future life.

It has been stated¹ that there is a belief that the soul takes snake-form after death; inquiry did not verify this. A snake in a house² has a little milk placed near it, but is killed outside. Snakes are not kept as pets.

IV.—TRIBAL GOVERNMENT.

The Suk have no system of chieftainship; the nearest approach to that dignity is the *kirowokin*, which is agreeably translated by Beech as “adviser”: that is, some prominent rich elder who has a knowledge of custom, and of cattle customs in particular.

When raids are in progress a certain warrior, renowned for his prowess, takes charge of operations.

It has been said³ that the Suk have no “chief medicine man,” as the Masai and Nandi; perhaps “medicine man” is a misnomer, but the Suk do possess a functionary known as the *Wuregoion* who is a most important person, and whose existence seems to have been successfully hidden for a number of years and whom they refuse to produce willingly or to betray in any way. A free translation of the word should include the meaning of Master of Cattle Ceremonies and the ability of foretelling the incidence of raids, and the method of combating the same, together with the power to ensure success to raids, and these attributes are all a matter of cattle: the word

¹ Cf. Beech, *The Suk*, p. 20.

² Several tribes hold that the Puff-Adder seeks company and draws near persons conversing: it certainly seems to do so.

³ Cf. Beech, *The Suk*, p. 7.

“ Preserver ” is suggested, inasmuch as cattle, their tending, acquisition and retention go to the root of the life of a Suk.

It is quite possible that when Beech wrote (1911) that there was no such dignitary, or that the present personage had not received his inspiration. As it is a fact that the Turkana, Masai and Nandi all have functionaries combining the attributes of this “ Preserver ” with the Suk, it seems reasonable to suggest that the Emuron, Laibon, and Orkoiyot of those tribes are due to the more definite Nilotic-Hamitic impress which they have received and which the Suk are now receiving, inasmuch as the Suk are manifestly in a stage of transition from Hill-men—Hunter—Agriculturist to pure Pastoralist.

This suggestion is somewhat borne out by there being no trace of any inheritance by the present *Wuregoion* of his functions from his father, and it is said that he is a man in the prime of life and that his office will descend to his son ; the secrecy concerning him is strict whilst with the other tribes mentioned the like personage is public.

The matter is interesting as possibly showing some indication of the way in which distinct priest kings as with the Turkana, Masai, and Nandi arose and gained their prominence.¹ It seems arguable that granted a belief in the sway of a person over the all-important cattle, he becomes a personage, that other attributes naturally follow resulting in a supreme priest-chieftainship.

The present Suk *Wuregoion* enjoys great and increasing wealth in stock, and belongs to the Sotot clan (Totem, the sun).

Magicians and rainmakers do not seem to have attained any great prominence with the Suk. Occasionally, one man is said to have laid a spell upon another which will result in death ; it seems that this accusation is generally brought by an unsuccessful party to a quarrel over property in order to influence the feelings of the community on his behalf. Divination by the examination of entrails is a power exercised by a number of Suk. Rain is “ made ” by propitiary sacrifices of cattle, and by the immersion of children of the *Terit* clan in a stream.

V.—CIRCUMCISION CEREMONIES.

The circumcision of youths of about 10 to 20 years amongst the Suk is their only important ceremony ; it is associated with age grades (*pen*) but there is no trace of the handing over of the charge of the country to the new age grade, as with the organised Masai and Nandi, which is possibly a later development : other Nilotic-Hamites as the Turkana, Bahima, and Karamojo do not circumcise, and do not seem to have come in contact with the Hill man or Anderobo as have the Masai, Nandi and Suk. This raises the presumption that circumcision is an inheritance

¹ Possibly also the *Nyakang* of the Pastoral Nilotic Shelluk and the *Abba Muda* of the Pastoral Hamitic Galla.

from the early Hill man stratum in those cognate tribes following the custom, and it is somewhat borne out by the Nandi tradition, that the originator of the rite came from country recognisable as that inhabited by the more pronounced descendants of that stratum, and a somewhat similar tradition amongst the Suk.¹

Circumcision rites among the Suk do not recur at stated intervals ; the practice is for youths desiring to undergo the rite to approach those who have been circumcised within recent years and who form the previous age grade. These intermediaries go to the elders of the tribe, and the elders give their decision whether the time is ripe, and seem to base their decision on the state of the harvest and the well-being of the stock. On permission being granted, the youths make a feast for the elders ; they then go and cut wood for the building of the *menjo* hut² in which the rites are to take place ; the actual building is done by members of the previous age and takes some five or six days ; this hut is not a circular erection, as might be expected, but a large rectangular hut with a two-sided sloping roof of grass. When it is completed the youths desirous of circumcision obtain a large oxhide (*wurio*) from a married woman of no particular relationship to themselves, and smear it with red earth ; the loan of this hide forms a close bond of almost filial affection. Candidates repair to the *menjo* hut which is now ready. It is situated in the depths of the bush, it has two doors, the right for those already circumcised (*mugaon*), the left for the candidates (*tiosion*) at the opposite end of the building.

Candidates from Kipcherut and from Maerich, two localities in the hills, are operated upon before all others ; and the operation is upon the members of the *Terit* (Totem thunder and rain), *Sopan* (Totem elephant), *Oro* (Totem Iguana), *Sotot* (Totem sun), clans in the first instance.

On the day before circumcision all the candidates collect in the *menjo* hut, the circumcised of previous age grades also are present, and the overflow is accommodated in rough shelters built in the vicinity.

An elder stands by the roof pole of the *menjo* hut with the circumcision knife (*rotwomet*) in his hand; he brandishes the knife telling the candidates of the pain they will have to undergo, and warning them that circumcision is for men not cowards, that cowardice will be punished by death, and the fearful had better depart. Some do so to the ignominy of themselves and their relations.

The next day about 4 a.m. the candidates are taken to the river, divested of all their ornaments, their heads are shaved and they bathe themselves with care. They return to the *menjo* hut where the doors are guarded by circumcised warriors.

The circumcisors (*barsiro*), who may be numerous, await outside the hut and the candidates are told all is ready ; there is a rush for the doors by candidates

¹ That the rite came from the Kamasia (*Tuken*) together with the axe and its helve. This tradition forms a song during the circumcision ceremonies of the Suk.

² Cf. Nandi, *Menjit*.

clamouring for the rite ; the guardians choose members of the localities and clans mentioned above who proceed outside.

Each operator has a stone ready upon which his patients sit ; these stones are in a slightly semicircular line. The candidate sits down, the penis is extended, the foreskin is impaled to the ground by a sharp peg of wood, it is scarified with hot ashes, and the outer skin so scarified is scraped with a knife ; it is then cut into a number of longitudinal strips. This completes the actual operation.

During this time the father of the youth, or else his uncle, together with his eldest circumcised brother, stand on the right and left sides of the candidate, brandishing their spears and pretending that they will kill the youth if he flinches ; behind the operator stands a friend of the father fixing the candidate's gaze to draw his attention from the details of the operation.

When the first youth of the *Terit* or the other senior clans has been circumcised the assembled men sing, "Now has been made a man in truth."

The services of the operator are arranged by the father of the candidate and a present of goats, honey or the like given as a fee.

After having been circumcised the youth is led into the shade, where flour, mixed with milk into a liquid porridge, is brought and poured into his mouth by his circumcised sponsor, a youth somewhat senior to himself ; the candidate may not use his hands or be fed in any other way on any other food by any other person for 15 days.

When all the candidates have been operated upon they retire to convalesce in the *menjo* hut, and do not leave its immediate vicinity, receiving no uncircumcised visitors.

On the completion of the first 15 days, the candidate may still not use his hands, and may only eat from a skin or from a calabash.

At the expiration of this month a sweetly smelling grass is brought and boiled in water ; the decoction is used by the circumcisor to wash the youth or youths upon whom he has operated. If the circumcisor is unable to perform this duty his son does so. This cleansing ceremony is known as *Laban*. Hands may now be used in eating. On the night of *Laban*, the fathers of the candidates brew an amount of hydromel for the circumcised spectators of the ceremonies, and there is some drunkenness.

The second month is spent by the candidates in allowing the strips of the foreskin to wither ; more freedom is allowed in movement, but fixed boundaries (*rotiot*) are drawn in the neighbourhood.

At the beginning of the third month each candidate is given a piece of leopard's fat, which is conserved by all *Suk* ; the day is known as *pelat*. A piece of iron is placed in a fire in the *menjo* hut for two days. On the third day of the third month a man known as the *Sosion*, invariably of the *Kasowa* sub-clan¹, appears and with him an attendant. They have drunk to excess and slept near the *menjo* hut the previous

¹ This sub-clan and its clan have not been located.

night. They arrive cursing the candidates and their parents, and generally making themselves a nuisance.

The mothers and other female relatives of the candidates, who have not seen their sons since the beginning of the ceremonies, assemble afar off and stone the *Sosion* and his helper as they conduct their antics ; for this the *Sosion* vows vengeance and shoots an arrow at the *menjo* hut containing these women's relatives ; a mock battle ensues, and the *Sosion* is overpowered by the youths, he admits defeat and consents to perform his functions.

The leopard's fat which has been given to the candidates is used to anoint the strips of the foreskin remaining ; the *Sosion* takes the hot iron, and as each youth emerges from the door sears this shrivelled skin, and the candidates alleviate the pain by laving with water. The youths retire to the *menjo* hut and their mothers and female relatives are told they are dying, and that the *Kipsigutwa* is killing them.

While the youths have been in the *menjo* hut they have been divided into three sections according to their years ; the first are known as the *Chenokopir*, the meaning of which was not ascertained ; the second the *Kamasiap* (the covered ones) ; the third the *Kapkesar* (the sleepers in ashes). Each of these divisions has a leader called the *Kirowokin*. The sections sleep head to foot in rows in the *menjo* hut, and are divided by lengths of wood laid on the floor. After a while the women are told that the first section has recovered, then the second, then the third, and that food to revive their relatives is urgently needed. This is brought and placed at a distance from the *menjo* hut where a notoriously surly individual, called the *Kipsiman*, receives it ; it is in two portions—one for the candidate, one for the *Kipsigutwa* who has relented.

So far nothing is known of the *Kipsigutwa* by the candidates, the women, and children, save that it exists, and is an extremely ferocious animal from Mount Mutelo.

The evening of the day of the *Sosion*'s visit the candidates emerge from the *menjo* hut and sing the *Tumba-Tios* song, which is a reiteration of the words "our fathers have cut us and burnt us and driven our mothers away." The women hearing this in the distance endeavour to reach the spot and are driven away by the circumcised.

After about three days each candidate is given a piece of bark string to tie to the piece of wood which is laid lengthwise in the *menjo* hut to mark the division between the three sections, and which is near his head ; the candidates and the women are informed that these are to tie up the offspring of the dread *Kipsigutwa* ; drumming and other noises are made in the *menjo* hut this night.

From now onwards the candidates may roam abroad after asking permission. They may go quietly to their villages in the evening, and whistle for food to be brought to them ; they must not be seen by their mothers or by grown women ; they are still clad with the *wurio* oxhide ; they spend their time in shooting birds and "holding up" girls from whom they may demand bracelets, or beads, or the like. All this

loot goes afterwards to the woman who has provided the *Wurio*; the candidates may only speak in whispers. The arrows used to shoot these birds are two sharp wood arrows (*err* or *kotin*) and one blunted arrow (*kamungo*).

At the end of the fifth month the candidates are forbidden to roam about and are recalled to the *menjo* hut. At dead of night they are ushered into the hut within which they find a small grass booth has been erected; they enter one by one as their names are called, the hand is inserted into a small opening in this booth and a sharp stab, drawing blood, is inflicted; next the leg is inserted and a similar stab results. This they are told is the work of the *Kipsigutwa*. They have, however, a very good idea that human aid has been invoked.

And now the initiation approaches completion and the veil is lifted. An elder takes his stand at the roof-pole, and bids the candidates beware of ever revealing what has happened to women, to the uncircumcised and to strangers; if questioned on the subject they are told to say that there is an animal known as the *Kipsigutwa* hailing from Mount Mutelo, very fierce, with one horn, one eye, like to a dog in body, stabbing people with its horn, and to show some old scar in evidence of stabbing.¹

The next day the candidates are excluded from the *menjo* hut while the circumcised and elders make figures of grass exemplifying a man, an elephant, a lion and so forth. One by one the youths are ushered in and asked what these various grass figures represent; behind the candidate is a recognised prompter, his circumcised sponsor from the beginning, who, to the assumed annoyance of the elders, tells the youth the answers (*sotto voce*). This question and answer is known as the *Ngorot*, and these questions and answers and the grass figures are the essentially secret part of a secret ceremony.

The following day the youths are taken to the stream, where they are treated to some plain speaking by the previous age grades on their own personal failings, misdeeds and future conduct, and small fines and light beatings are adjudged; after this they bathe.

That night the candidates repair to the *menjo* hut where they are formally given the name of their age grade, after deliberation by their elders.

The next and last morning the *Kipano* dance is performed. The circumcised men form a locked circle with their arms, in the centre of which the youths cower under the oxhide (*wurio*); their mothers and female relatives try to break the barrier, and when successful are made to identify their son beneath his oxhide. They do so, and bear him off in great glee and anoint him with butter and deck him with beads. That night the elders sleep in the *menjo* hut, where food is taken to them; the newly initiate may not re-enter that *menjo* hut again and they go to show themselves off to, and to demand presents of oxen, sheep, and goats from their relations.

¹ All this was told the writer when first questioning various Suk as to circumcision ceremonies and the scars shown.

It is suggested that this extraordinary ceremony is intended to convey the meaning of a new birth ; no obvious trace of a ceremonial death was noted.

The following points may be considered in this connection : there is a ceremonial cleansing before and after the ceremonies ; the initiate is fed as a child on pap and gradually taught to use his hands, and fed by an almost maternal sponsor ; the initiate wears a large oxhide, a woman's garment, to cover himself entirely as a child in ventro ; the initiate is taught to recognise the doll-like representation of common objects by the promptings of his sponsor, as a mother might teach her child ; finally expiation is done for past misdeeds and the initiate enters upon a new life with a clean sheet ; the *Tumba Tios* song, the *Laban* purification, the disuse of hands in eating are all found in the rites attending a birth with the Suk.

As regards ceremonial death the following may be a faint trace : as may be expected from the operation performed death sometimes follows from septic conditions ; the mother and other female relatives are told that their relation has been killed by the fictitious *Kipsigutwa* animal who is said to come from Mount Mutelo, towards which mountain all Suk are buried on their side so as to maintain the direction of the umbilical cord ; while they speak of this mountain as the "navel" of the Suk, the word Mutelo does not mean navel.

It seems that circumcision with the Suk is an inheritance from the Anderobo stratum in their composition and not due to their Niloto-Hamitic contact ; and as the survival of the Bushman or Pigmy aboriginal is historic, there would seem to be no reason why the shy hunting forest-dwelling Anderobo should not represent this aboriginal in Eastern Africa.

Incidentally it is said that a Nderobo is the operator at Masai circumcision ceremonies, by which tribe he is regarded as an outcast.

The Suk practice *clitoridectomy* ; the operation is not secret, men and circumcised youths may witness it : it is performed near the village. A dance is held ; the father may not see his daughter until the morning after the operation, when she oils her limbs and stands before him covering her face with her hands. He then shows her what cattle he proposes giving her when she marries. The mother of the girl wears a headdress of cowrie shells known as *tenda*¹ for the time.

VI.—MARRIAGE.

No girl can marry unless the operation noted above has been performed. A man desiring to marry proposes to the girl of his choice, who refers him to her father if she accepts his advances. The would-be groom takes his father or, if the father is dead, his brother, and in the absence of both, his paternal uncle, to confer with the father-in-law to be.

¹ Like to that worn by the Nandi father, should his daughter be shown a virgin.

The father-in-law receives them with courtesy and sends them back to bring him honey-wine. It being settled that the clans of the contracting parties have intermarried before, elders of the groom's clan, his mother's clan, the bride's clan and her mother's clan meet to discuss the bride-price ; this varies from a few goats with the Hill Suk to up to 80 head of cattle with the Pastoral Suk. The bargain is struck between the representatives of the four clans to their mutual satisfaction, and if the groom is too poor to afford the price agreed upon, his clan and the clan of his mother will make contributions.

In the evening of a fixed day the groom attended by men of his circumcision age and of his clan go to the village of the girl's father. They are kept outside the village and a demand is made for a fee to be paid before the gate is opened ; this is acceded to but not paid.

The visiting party enter the kraal, but the groom and those of his circumcision age may not enter the huts. About 4 a.m. the bride is handed to the groom ; this hour is chosen for fear of a bird of ill omen called the *Kipteldil*, apparently roosting at that hour. The bride demands a present before leaving her mother's hut, demands a present when she crosses a stream, demands a present before entering the village of the groom, a present before she sits down, a present before she eats, and on every possible contingency. The groom mentions certain cattle in his holding which he will place to her credit, and these particular cattle may not be used for the purchase of other subsequent wives and ultimately descend to the bride's youngest male offspring.

On arriving at the groom's village the bride goes to his mother's hut for three days, during which time she may not be seen by the groom or his father. The fourth day she goes to the hut which has been prepared for her reception by the groom and awaits him there. She may return to her father if dissatisfied with her husband, otherwise the morning following she ties a leather bracelet known as *Terim* on her right wrist and is married. This bracelet never leaves her, and if it breaks she holds it in position until another is put in its place. The night of her ratification of the union, a feast is held.

The Suk practice polygamy, and with the rich Pastoral sections as many as ten women are married.

Free love is usual amongst the youths and girls, but not approved by the elders : after marriage the women are usually very faithful to their husbands, and conjugal disputes on this head are rare ; there is real affection between middle-aged and old couples.

Irregular unions seem absent, but when a man inheriting his brother's wife does not desire to take her as his wife, he countenances her having a lover.

VII.—BIRTH.

Before the birth of a child the prospective mother calls various women friends, having prepared an amount of food. Parturition is in a sitting position ; the

midwife (*kaniaiecho*) receives the child and severs the umbilical cord. The caul is known as the *kiptaimet*. The passage of the after-birth (*parua*) is aided by causing the mother to vomit. The babe is washed in warm water. If the child is a boy the father is apprised of the fact by the women singing the *Tumba Tios* song, if a girl the *Tumba Chemiri*. A feast is made on the day of the birth which is known as *Malalia None*.

The mother may not use her hands in eating for 15 days; at the end of this period she undergoes the *Laban* ceremonial washing, as do the youths at circumcision, and may thenceforward use her hands for eating.

The father does not sleep with the mother until the first two lower teeth of the child are cut.

The birth of twins is a serious matter. The mother and father may not leave their huts for three or four days, when people who have begotten twins collect and dance a secret dance; a he-goat is eaten, and the tail of a sheep is bitten off and eaten by twins. The parents may not wear sandals for three or four days. The names of twins are always the same, *Kumagal* or *Chesinan*, he-goat or she-goat. Twins are popularly supposed to have thin skulls, and if beaten on the head the person assaulting must pay a fine of a black goat to the twin.

The birth of twins is disliked and possibly this is due to an idea that more than one child at a birth is an animal trait pronounced in sheep and goats.

Straps of leather (*legetio*) are bound around the mother as a support.

The mother gives her child a name after birth; it generally follows some recent occurrence. This name is only used by the immediate family until others are substituted, but the mother retains this name for her child.

Infanticide is rare save with deformed babes.

Suk women are not prolific as are the Turkana and Karamojo, who are exceptionally so.

Children by a former marriage of the woman are generally nephews or nieces of the present husband, and as such are of the family. Children by another during marriage might be accepted by the husband, but this is very doubtful.

Illegitimate children are rare and remain with the mother, but there is a custom, but not a rule, that they should go to the father on growing up.

Abortion is said to be rarely practised.

VIII.—DIVORCE.

Divorce is rare: the grounds for divorce seem to be sterility, and breach of the husband and wife food taboos. There is no formality for divorce, but a meeting of the clans is called to discuss the matter. Women rarely desert their husbands, as the man taking them would be liable to a fine for conjectured adultery or to forfeiture of all his property.

The punishment for adultery is the killing of the adulterer when caught in *flagrante delicto*. It is not certain whether the adulterer can be legally killed if the whole of the woman's bride-price has not been paid.

If the adultery takes place in the paramour's village, the husband's village is not defiled, and the adulterer is fined according to his means.

Quarrels relative to adultery are always taken up by the clan of the husband.

IX.—ILLNESS AND DEATH.

When a man or woman is mortally sick, the relatives collect a number of elders to perform the *kisonot*; this is to all intents a Litany. An elder called the *kisonin* stands up while all the others cower. He declaims ahead of the congregation, "He will not die," "He shall live," "He will eat to-day," "He will see his cattle again," and so forth many times, and is followed altogether devoutly by the people assembled, together with here and there a sound described with felicity by Beech as a "two-fold Amen." The whole thing strikes the European observer as simply and devoutly religious.¹

A man feeling his end approaching, calls all his children, tells them that his days are spent, and admonishes them as to their future conduct. He speaks of his property and makes any special bequests apart from the customary rules of inheritance. After death his wives, sons, and daughters discard all ornaments; the males shave the forelock, the females the whole head. The personal ornaments of the deceased man are divided amongst his friends, the nearest friend having a preference.

The sons dig a deep grave in the cattle kraal, make a thatched stick bed, place the body thereon together with his sleeping mat of hide; the head of the corpse is rested on his pillow stool, honey-beer, tobacco and other food beloved by the deceased is placed in the grave by the body. Above the body are laid rafters of sticks: on this upper platform grass is placed, above the grass earth, then stones, then a mound of cow dung, and finally a zariba of thorns to keep away the hyenas and jackals.

Suk are buried on their side so that the stomach lies towards the mountain called Mutelo in the Sekerr Mass. Old men say Mutelo is the navel of the Suk. Mutelo means a landmark or that which is known of all. It is a hill of some 9000 feet in height and is uninhabited at its summit.

A Suk not possessing cattle is buried in the same fashion a short distance from his hut.

After a month has elapsed a feast is made and the property is divided amongst the Pastoral Suk; the village then moves. The wife of the deceased shaves her head twice after the death of her husband, and at the third growth shaves only her temples and sides of the head. This lengthy period completed she may re-marry and cohabit.

¹ A like ceremony, but known as *chebut*, is followed when it is desired to cast a spell upon some individual universally hated.

A dying woman calls her children, and especially her last-born male child, adjures them as to their behaviour, makes such bequests as she thinks fit, the entire residue of her property falling to her last-born son who invariably recognises her bequests. All the various cattle and their offspring, which she obtained from her husband when a bride for her separate use, fall to this son, as also her feminine ornaments, other than those bequeathed. This son alone digs the grave of his mother and buries her. A woman's grave is not in the cattle kraal. After one month an ox is killed and a feast made. On the death of his wife a man may not re-marry for one year. He shaves the forelock and discards his headdress (*siolip*).

On the death of a small child the body is thrown into the bush, the father shaves the forelock, the mother the sides of the head. No feast is held : on the death of a grown boy or girl the body is buried and the like formalities observed, but no funeral feast is held.

Grass is thrown on a friend's or relative's grave by those passing, for remembrance.

X.—INHERITANCE.

The general rules on the death of a Suk are :—

1. Exclusion of ascendants for descendants.
2. Exclusion of descendants in favour of collaterals, balanced by inclusion of descendants as far as property acquired by a deceased father other than by inheritance is concerned.
3. Exclusion of females.
4. Preference to primogeniture, balanced by a preference to male ultimogeniture on death of mother.
5. Specific deathbed bequests.

Creditors of deceased recover from inheritors.

As regards the inheritance of father's wives, the Agricultural Hill Suk do not take their father's wives, old or young, but maintain them unless they re-marry ; the Pastoral Suk have adopted the custom of the Turkana and Karamojo and take their father's wives, but not their own mothers. They discard the older women but maintain them.

As regards the inheritance of brother's wives, these go to the next elder brother, and he may give permission to marry elsewhere if he wishes, or pass them on to a younger brother of the deceased.

Failing sons and brothers, the women pass to the husband's clan as other property wanting heirs.

SOME POLYNESIAN CUTTLEFISH BAITS.

By HARRY G. BEASLEY.

THE material dealt with in the following notes has been drawn from various sources, and was originally intended to have been incorporated in a more ambitious article, on fishing appliances generally. Ten groups of islands are shown to have more or less knowledge of this highly specialized form of fishing, and with one exception all are either pure Polynesian or contain well-known Polynesian influences. It is not suggested that these by any means complete the list of localities where such baits are in use, but merely that with the limited information available such important centres as the Marquesas and the Low Archipelago have so far yielded no authentic specimens. Some consideration of the distribution of these baits may be of help in the study of the early Polynesian migrations, and a reference to the map will show how essentially Polynesian this contrivance is. That it must have been invented in early times, prior to the migrations that flowed into central Polynesia, is obvious, and looking at the map, and recalling how New Zealand was peopled from the East, one is inclined to lay down the track from Hawaii southwards, to Tahiti thence westward, until even the fringe of the Solomons and the outlying islands of New Caledonia were reached ; that no settlements were made in the New Hebrides would be accounted for by the unfavourable disposition of the natives, for even to-day there is no group in the Pacific where strangers are less welcome. A feature of these baits is that the natives account for their shape by a tale which, whilst always agreeing in its main outlines, yet differs considerably in the details ; this affords proof of common origin, whilst the presence of the minor variations shows that the tale must be of considerable antiquity to have allowed time for these variations to have crept in. The most extensive of these fables was kindly sent me by Mr. Standen, Assistant Keeper of the University Museum, Manchester, and was collected by Mrs. Hadfield, wife of the well-known missionary at Lifu, Loyalty Group. "One day a Rat came down to the seashore of Lifu. He wished to cross to Maré to visit his relations, but was afraid to undertake such a long swim. Presently a Cuttlefish came along, and the Rat asked him where he was going. 'I am going to Maré to see my relations,' replied the Cuttlefish. 'Will you take me across, for I too want to see some relations over there,' said the Rat. 'All right,' said the Cuttlefish, 'get on my back, and I will take you over' ; so the Rat jumped on the Cuttlefish's back and they set off. About half-way across the sea became rather rough, and the Cuttlefish's body stuck out of the water each time it topped a wave. The Rat began to laugh, and laughed so much, that the Cuttlefish became very much annoyed. 'What are you laughing

at ?' he said. ' Oh, I am only laughing at your bald head,' replied the Rat. Then the Cuttlefish was very angry, and said, ' If you laugh at me again, I will dive down and let you drown.' This frightened the Rat very much, and he held himself in, although he was nearly bursting with laughter whenever the bare body of the Cuttlefish showed. At last they reached the island, and as soon as the Cuttlefish backed up to the beach, the Rat jumped off and rolled about on the sand, shrieking with laughter and crying out, ' Oh, what a bald head ! oh, what a bald head ! ' and never a word of thanks to the Cuttlefish ; then the Cuttlefish became furious and tried to get at the Rat, but could not. So calling out to the Rat, ' Wait till I get you in the water, and then I will give you a bald head,' the Cuttlefish rushed off in a rage, and dived down to see his relatives, whilst the Rat ran away to tell his about the Cuttlefish's bald head. Since then the Rat and the Cuttlefish have been deadly enemies. This is why, when the Cuttlefish sees the bait, it thinks it is its ancient enemy the Rat, and rushing out to seize it clings to it so strongly that the fisherman easily brings it to the surface before the arms can be unclasped."

In the Tongan Group the version is as follows¹ :—“ The Rat and the Octopus tribe were once warm friends, but a rat on a volcanic island that was suddenly found to be sinking below the surface of the water, having called in an octopus to carry him on his head to a more secure dwelling place, with promises of coco-nuts in return for safe carriage, not only forgot to pay his passage, but having felt ill on the voyage, behaved in anything but a nice manner. These facts so rankled in the hearts of the octopods that they were quite unable to resist making an onslaught on a bait which combines the element of both rat and nut.” This is the only group where the nut is mentioned, and this is probably a later addition. Taking into consideration the strong Tongan influence in the Fiji Islands one might expect the story as found there to bear a close resemblance to the former, but such is not the case, as may be judged from the following version collected by Miss Gordon Cumming some fifty years ago from the Island of Ngau². “ A Rat one day fell off a canoe into the sea, and landed on the head of a Cuttlefish, greatly to the alarm of both. The Cuttlefish was going to shake off the Rat, when the latter prayed him to show mercy on him and carry him to a place where his grandfather and grandmother were waiting for him, so the kind Cuttlefish swam on and on till he was weary, but the Rat enjoyed the new mode of travel, and urged him to go on farther and farther. At last they neared a grassy bank which was just where the Rat wished to land, but being an ungenerous animal himself he feared the Cuttlefish would play him some trick, so he cried, ‘ Oh, please do not land me there ; I shall surely die.’ But the Cuttlefish being weary of him swam straight to the bank, whereupon the Rat jumped ashore, and instead of thanking his kind deliverer he ran away jeering—so now the Cuttlefish hates the Rat, and is always on the watch to seize him and punish him.”

¹ Lambert, *Voyage of the Wanderer*, 1883, p. 184.

² Gordon Cumming, *At Home in Fiji*, 1901, p. 345.

Stair,¹ whose book on Samoa is well known, gives the following short account. “The Rat and the Cuttlefish fought, and the Cuttlefish was defeated, hence long-cherished anger and feud has existed between them. In consequence of this, whenever the rat-shaped bait is rattled before the Cuttlefish, its anger is excited at the sight of its old opponent.” The most interesting remark in the foregoing is that the bait is rattled when in operation.

In the Ellice Group the Cuttlefish bait does not appear to be in use, although the squid *Feki* is valued as a bait for hooks. Hedley² during his residence on Funafuti noticed their entire absence. On Niüe or Savage Island it is in general use, and the story of the war between the rat and the octopus is well known. I am indebted to the Rev. Cullen of the L.M.S., the Resident Missionary, for the following version, and also for the gift of the very excellent example figured later (Fig. 4). The story as collected by him is as follows:—“A Rat and a Crab put to sea in a clam shell, the Rat was afraid lest the shell should sink, and wished to return to the shore, but the Crab, knowing he would not drown if the shell did upset, would not consent. Presently the shell filled and sank. The Crab sank too and crawled home, but the Rat was drowning. Came an Octopus, and supporting the Rat above the waves with one of his tentacles, took him ashore. The Rat in his fear evacuated on to the head of the Octopus, but the Octopus did not notice it. When the Rat was safe ashore he called out to the Octopus, ‘Put your hand on your head.’ The Octopus did so and drew it back filthy, ever since the Octopus has sought to catch the Rat and eat him.” The introduction of the crab into the story is new, and may be considered as a local addition, since it does not occur elsewhere; but the general theory that the rat ill-requited the octopus for services rendered remains the same.

On the other side of the Pacific, in the Hawaiian Group, this contrivance is also in use. Captain Cook³ noted the stone sinkers which form part of the bait lying in the canoes alongside his vessels, and remarked on their oval shape and the groove running down the centre, and mistook them for sling stones. In this group the squid was much appreciated as a food, both when fresh or dried in the sun, and formed a favourite relish to their usually somewhat tasteless *Poi*; incidentally I have observed the same liking in Brittany, where heaps of these nasty-looking fish, dried a rich brown colour, can be seen for sale in the markets which are such a feature of the coast towns. From the vast numbers of sinkers that are still to be found in the group one must surmise that this method of fishing was in very general use. The material for these sinkers varies considerably, although those of lava or coral are the most common; some even are made of granite from Hong Kong, obtained from the ballast of sailing ships.

¹ Stair, *Old Samoa*, p. 188.

² Hedley, *The Atoll of Funafuti*, No. III, p. 265.

³ Cook, *Third Voyage*, II, 248.

DESCRIPTION OF THE FIGURES.

Lifu : Loyalty Group.

This example was collected by Mrs. Hadfield, wife of the well-known missionary. The body consists of an oval lump of coral rubbed down, on top of which is affixed a section from the shell of *Cypraea Mauritana*. The tail is a natural twig, around which is wrapped a cord of twisted banana fibre; the line for suspension as well as the binding cord is also of this material. An interesting feature of this bait (occurring also on Samoan baits) is the presence of four strips of banana-leaf, two on each side, intended to represent the feet of the rat. Mrs. Hadfield, who has lived on Lifu for twenty years, says that the natives have no special name for these baits, but that they are always called Rats, *Aji*,¹ whilst the Octopus is called *Menez*. I am indebted to Mr. R. Standen of the University Museum, Manchester, who is the present owner of this bait, for a photograph from which the figure is taken, as well as for the whole of the notes dealing with the group; also to Dr. W. M. Tattersall,

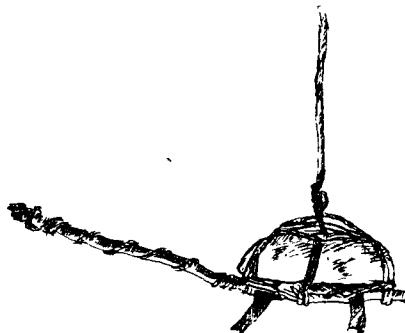


FIG. 1.—LIFU : LOYALTY GROUP.
Manchester University Museum.

Keeper of the Museum, for kindly permitting the bait shown in Fig. 8 to be photographed.

Tongan Group.

Churchill,² speaking of these baits, says, "Highly specialized is the employment in Samoa and Tonga of the lure for the octopus," and he mentions the use of long strips of green leaves as being particularly attractive to that creature (*cf.* Fig. 11). I think rather that the use of leaves is confined to certain localities, namely, to the Hawaiian Group, Tonga, and Niüe; at any rate, I have definite information of their use from these three places only. It may also be customary at Lifu, for in Fig. 1 the tail carries a cord, and, as will be shown in the description of the Niüe form, this is for attaching leaves (Fig. 4). Further, I dissent from Churchill's² view that these leaves attract the octopus (as bait); their presence, it seems to me, is to camouflage the bait, and conceal the line and other portions which fall short of the natural form. The native name

¹ Sidney H. Ray.

² Churchill, *Easter Island*, Carnegie Inst. Report, 1913, p. 246.

is *Lakei* according to this writer, whereas Lambert¹ gives it as *Maka* (hook) *Fechi*. Reverting to this figure, it will be noticed that the general outline is more rat-shaped than many, and the grinding down of the central portion, which is usually of a quartz-like stone, must entail considerable labour. The attached sections of Cypraea shell are never numerous, and a considerable portion of the stone sinker is usually exposed. The "tail" should be longer than is shown in the figure, and is made of flexible rootlet, although Lambert mentions tails of sennit. The length of this specimen is $3\frac{3}{4}$ in. (9.5 cms.), exclusive of tail, and it carries only two sections of shell, attached by well-made sennit line. I am indebted to Mr. Oldman for kind permission to reproduce this example.



FIG. 2.—TONGA.
Oldman Collection.

Samoan Group.

From this group I unfortunately know of no authentic examples in this country. The legend of the rat is, however, generally known, and a short account has already been given. Stair² gives a good account of this bait as follows:—"The Rat (*Ole Imor*) was not much larger than a good-sized field mouse. The bait used in the capture of the *Feeé*, or Cuttlefish, is made of wickerwork in the shape of a rat, in which are placed small stones so that it forms a sort of child's rattle." This is the first time the suggestion of a rattle occurs, and it turns up again in the Society Group, though in this case it is the noise of the plates of shell knocking together that is said

¹ Lambert, *Voyage of the Wanderer*, 1883, p. 184.

² Stair *Old Samoa* London. 1897, p. 188.

to be so attractive to the octopus. Churchill¹ says that the native name for this contrivance is *La'Ei*, and that it consists of a bundle of *Ti* (*Dracæna*) leaves attached to a stone, a description which hardly agrees with that of Stair. The making of these baits was a recognized industry (as with all other articles that required skill among the Samoans), and those engaging in it were known as *Fai-Puletae Feé*.² The name for the octopus was *Lafete*.³ Fig. 3 shows a good example of the type in general use, and is drawn from a figure in an article by Dr. Sierich in the *Internationales Archiv für Ethnographie*, Band 15, 1902, p. 186. The text description is unfortunately short. The native name is given as *Isumu*, which differs from that given by Churchill. It is interesting to find that Sierich speaks of a mouse as suffering from the antipathy of the octopus, in agreement with Stair's remarks already quoted. A comparison with the Tongan example in the preceding figure will show the close resemblance both in form and method of construction, which is not surprising considering the close relationship of the two groups. The numerous strips of native cloth or coco-nut fibre attached to the "tail" are noteworthy.

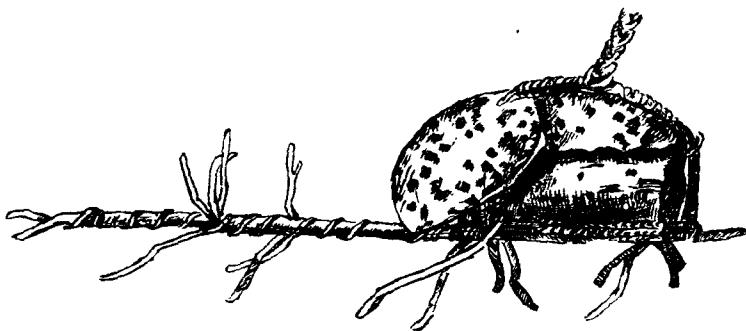


FIG. 3.—SAMOA.
After Sierich.

Niue: Savage Island.

The specimen illustrated, together with the legend already given, were sent me by the Rev. James Cullen, L.M.S., Resident Missionary on the Island. It is quite distinct from any other specimen in a number of points, and having been sent to me direct may be considered correct in every detail. Unlike the Tongan type there is no internal sinker of stone or coral, the weight of the two shells alone being considered sufficient. The length over-all is 15½ ins. (39·4 cms.), and the weight 7 oz. The wooden "tail" projects about three inches, forming the head, and to this is attached a length of fine fibre (*Hibiscus*) which serves to attach the bunch of half a dozen strips of coco-nut leaf. The lower Cypræa is drilled with two holes, and the "tail" being flexible fits tightly into the lip of the upper shell, the whole being

¹ Churchill, *Easter Island*, Carnegie Inst., 1912.

² Stair, *Old Samoa*, London, 1897, p. 188.

³ Headley, *The Atoll of Funafuti*, Sydney, 1896, No. 3, p. 43.

secured with lashings that pick up the "tail" at either extremity. The octopus on Niue is called *Fefe*¹.

Figi Group. Ngau Island.

This type, although of a more simple form than some examples, yet shows much ingenuity in its construction. The foundation consists of an egg-shaped lump of coral, which is almost completely covered by the crowns of a pair of large mottled Cypræa shells of equal size; the lips and bases of these have been ground down until they resemble the two halves of a coco-nut shell. In the space left by the curve of the edge at each extremity of the upper Cypræa, two pairs of quite small cowries are inserted, to cover the exposed coral sinker; these give a suggestion of eyes, which, however, I hardly think is intentional. The "tail" consists of a short stout rootlet, and is peculiar in its downward and sloping position; this would cause the bait to rest on its side when in use. The bait, being nearly the shape of a ball, would

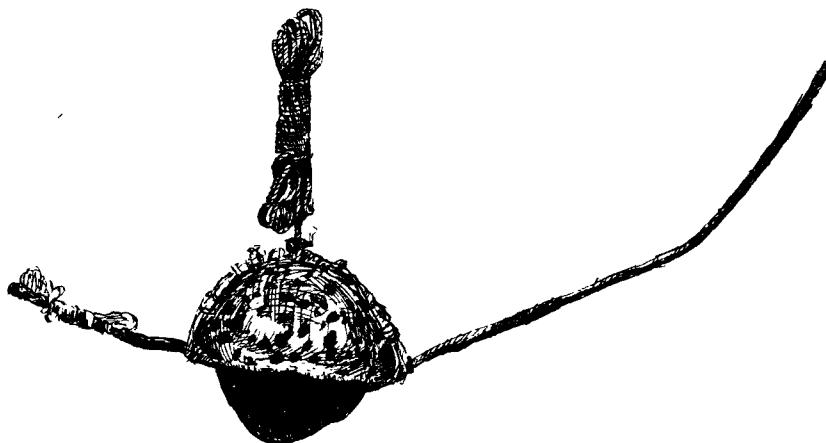


FIG. 4.—SAVAGE ISLAND (NIUE).
Author's Collection.

roll in any current; the stiff tail, therefore, is probably intentional, since it would lodge in any convenient fissure in the coral and serve as an anchor. The whole contrivance is bound together with an encircling band of plaited sennit of the regular Fijian type. The weight is considerable, being nearly $1\frac{1}{2}$ lbs.

I am indebted to Miss Gordon Cumming for permission to describe and figure her highly interesting specimen. Miss Cumming's delightful account of her residence in Fiji is well known, and this particular bait is mentioned therein.²

Fakaofu: Union Group. Bowditch Island.

Of this group I have not been fortunate enough to find a specimen to figure, but Lister³ gives us a fairly complete account of the contrivances, and instances the use of a bunch of coco-nut leaflets. He says, "The octopus bait was made on the

¹ Smith, *Journal Polynesian Society*, June, 1902, p. 103.

² Gordon Cumming, *At Home in Fiji*, 1901, p. 345.

³ Lister, "Notes on the Natives of Fakaofu," *Journ. Anthropol. Inst.*, 1892, vol. xxi, p. 58.

same plan as those of Tonga or Samoa, *i.e.*, with a mottled cowrie shell for a body, and a tail with strips of coco-nut leaflets attached to it. It was, however, not so rat-like in shape as the baits in those Islands, and I found that though they have a version of the widely spread rat and octopus story, they do not look on the bait as representing the rat.”

Funafuti: Ellice Group.

Hedley,¹ whose investigations on Funafuti extend over several months, remarks: “The octopus bait of stone and cowry shells so frequently used in Polynesia was not



FIG. 5.—NGAU, FIJI.
Miss Gordon Cumming's Collection.

seen by me. The native name for the fish is *Feki*, and they are valued as baits for hooks.”

Tahiti.

References by the early navigators and others to the form of the baits in use in the Society Group are fortunately fairly plentiful. Parkinson's narrative of Cook's First Voyage reads as follows²:—“Sometimes they make use of a decoy made of the

¹ Hedley, *The Atoll of Funafuti*, Sydney, 1896, No. 3, p. 265.

² Parkinson, *Journal*, 1773, p. 19.

backs of cowries and other shells, which are perforated and tied together in the shape of a fish, making a head of it with a small cowrie, and the tail is formed of grass ingeniously plaited. At a little distance under this decoy hangs the hook." The fine engraving on Plate 13 gives a very fair likeness of the bait as we know it to-day. Two tails only are shown, in which it resembles the specimen shortly to be described;



FIG. 6.—TAHITI.
Fuller Collection.

the addition of the hook is obviously an error on Parkinson's part, for this is plainly an ordinary bone and shell spinning-hook for catching bonito. Ellis,¹ the pioneer missionary, writing about 1820, has a good account of these baits:—"The bait consists of a straight piece of hard wood a foot long, rounded and polished, and not half an inch in diameter. Near one end of this a number of the most beautiful

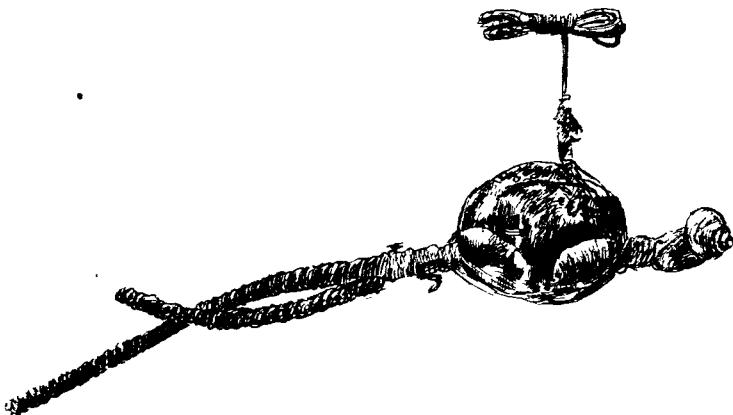


FIG. 7.—TAHITI.
Author's Collection.

pieces of the cowry or tiger shell are fastened one over the other, like the scales of a fish or the plates of a piece of armour, until it is about the size of a turkey's egg and resembles the cowry. It is suspended in a horizontal position by a strong line and lowered by the fisherman from a small canoe, until it nearly reaches the bottom. The fisherman then gently jerks the line, causing the shell to move as if inhabited by

¹ Ellis, *Polynesian Researches*, p. 120.

a fish ; the jerking motion is called *Tootoofe*, the name of this singular contrivance. The cuttlefish, attracted, it is supposed, by the appearance of the cowry (for no bait is used), darts out one of its arms or rays which it winds round the shell and fastens along the openings between the plates. The fisherman continues jerking the line and the fish puts forth another and another arm or ray until it has quite fastened itself to the shells, when it is drawn up into the canoe and secured.” Such is Ellis’s account, and in view of the great difference between it and Parkinson’s, it is obvious that two distinct types at least were in use in this group. Fortunately, Dr. Tattersall of the Manchester Museum was able to provide me with an example of the type described by Ellis (Fig. 8), which is further vouched for by Lesson, an observant Frenchman who wrote the account of the *Coquille’s Voyage*¹ and who speaks of this particular pattern as follows :—“ Their most ingenious method of fishing is called *Poreo*, used in the capture of octopi from the bottom of the sea. It is made of a small wooden rod having at one end a number of pieces of shell loosely attached forming an oval mass



FIG. 8.—TAHITI.
Manchester University Museum.

which also provides necessary weight for sinkage. When the contrivance is shaken a noise is produced from the fragments of shells, which attracts the octopi which enfold it with their arms and are thus drawn up.” Reverting to Fig. 6, which illustrates the type that Parkinson figures, one notices at once the greater elaboration and consequent superior finish as compared with any of the baits hitherto shown. It would seem that no stone sinker is used, and in order to obtain the necessary weight additional discs of the Cypræa are attached wherever possible, over and above the large complete shell which forms the foundation ; in the present example there are eight attached segments. Through the centre of this mass of shells a slender bone is passed (probably obtained from the leg of a frigate bird), projecting some 6 ins. (15.3 cms.) at the tail end, and 1½ ins. (4.5 cms.) at the head. This bone tail-projection is then wrapped with stout braided sennit of flat section, and it is to this that the three tails are attached with fine cord. Two loops for suspension are provided, one at the apex of the principal shell, the other being fastened to the short end

¹ Lesson, *Voyage de la Coquille*, Paris, 1838, p. 390.

of the protruding bone, which in use was probably covered with a *Turbo* shell, as shown in the following figure. The total length is $15\frac{3}{4}$ ins. (40.1 cms.). Fig. 7 is similar to the foregoing except that only two tails are present. It is, however, more complete than usual and has the nose intact; this consists of an entire shell of *Turbo petholatus*. This specimen was in the Sydney family and came from their residence "Frognal," Sidcup. The length is 16 ins. (41 cms.). The remark made by Lesson, already quoted, that the squid is attracted by the rattling of the small segments of shell, may perhaps be not unfounded, since this specimen when bumped on a table emits a curious hollow rattle. Fig. 8 has already been referred to, and this



FIG. 9.—TAHITI.
British Museum.

type was the subject of both Ellis's and Lesson's remarks. This represents the alternative Tahitian form; as regards the actual bait it resembles the type already dealt with, the main difference lying in the substitution of a stiff wooden rod for the sennit tails. The body of the bait, which is nearly hidden, consists of a complete *Cypraea tigris* shell around which are attached nine oval sections cut from the dorsal surfaces of *Cypraea tigris*, *C. arabica*, and *C. ventriculus*. The length of the rod, which is of black wood, is $12\frac{1}{4}$ ins. (31.2 cms.). The suspension cord, which seems somewhat slight for the purpose, is of banana fibre. I am indebted to the authorities of the Manchester University Museum for permission to illustrate this specimen. My

authority for including Fig. 9 rests on the following reference by the Earl of Pembroke¹ :—“ They saw off the convex side of a large spotted cowry, fasten a hook to one end and a line to the other. They then fill the shell with a large lump of roasted breadfruit, and bait with a smaller lump.” The use of the cowrie shell as a bait container seems to indicate that it was primary intended for taking squids. The author referred to says that he saw it in actual use on the reef, which is where they would be found ; at the same time there are so many varieties of reef-fish that it is more than possible that other than squids might be taken. This particular specimen is in the Vancouver Collection in the British Museum, so that it dates back to 1792, long before foreign influence had become felt. The hook itself is cut from the black

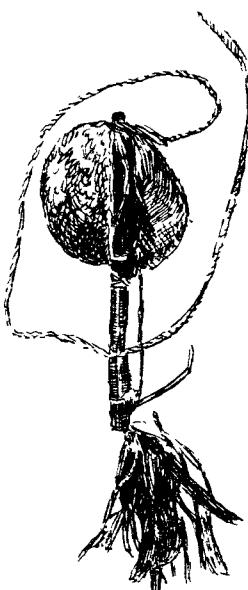


FIG. 10.—HAWAIIAN GROUP.
Bishop Museum, Honolulu.

pearl shell and embodies the peculiarities common to Tahitian hooks. The distance between the hook and the shell is short, about $2\frac{1}{2}$ ins. (6.3 cms.). The shell bait-container may be that of a crab, whilst the lashings are of twisted fibre. The specimen is shown half size.

Hawaiian Group.

The baits from this group differ considerably from those in other parts of the Pacific. The principle on which the contrivance works has for some reason been reversed, and, instead of lying flat on the bottom, the tail becomes a stout rod held perpendicularly by the line ; in order to snare the fish the bottom of the rod is fitted with a barb, the composition of which varies. The whole has thus, in principle,

¹ *South Sea Bubbles*, 1872, p. 130.

become an ordinary hook, to the upper end of which is attached, on the one side, a stone sinker, and on the other the bait, as represented by a large and complete Tiger cowrie, the barb being hidden by a bunch of coco-nut leaf strips. The native name is *Makau Lu-Hee*, hook for octopi. None of the early voyagers seem to have noticed this contrivance, except the ever-observant Cook, who mistook the grooved sinkers for sling stones. Fig. 10 was kindly forwarded by Dr. Brigham of the Bishop Museum, Honolulu, and is representative of the general type, besides being complete in all details. Unfortunately I have not the measurements, but the shell is obviously *Cypraea tigrina*. Fig. 11 shows a pair of old-time baits, unaffected by European influence. In this instance the bone barbs are shaped like those of the

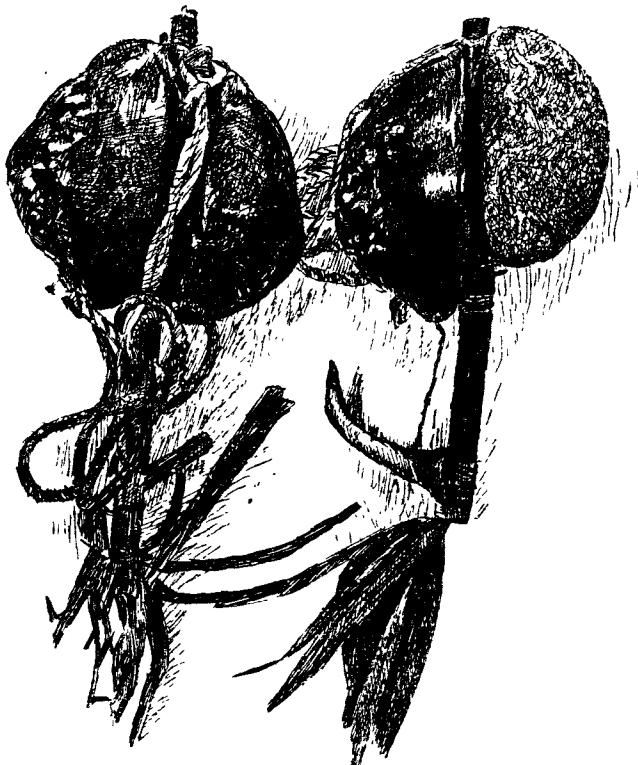


FIG. 11.—HAWAIIAN GROUP.
Bishop Museum, Honolulu.

Bonito hooks, and are drilled with a single hole. The line, however, is still carried down to the base of the barb, and runs parallel to the wooden rod which thus becomes the shank. The specimen on the left is noteworthy in having the stone sinker replaced by a second *Cypraea* shell. It is interesting to note the neat way in which the sinker of the right-hand specimen is attached. Both these are figured by permission of the Bishop Museum authorities. Fig. 12 is illustrative of modern improvements, having two barbs of iron wire; no doubt they were more serviceable than the single-bone barb, and it is somewhat surprising that this duplication of the barbs was not carried out in the older specimens. The stone sinker is

a fine old example, and greatly antedates the rest of the contrivance; in use this was probably furnished with a bunch of fibres which in the water would rise up and



FIG. 12.—HAWAIIAN GROUP.
Oldman Collection.

tend to hide the barbs. The total length is $7\frac{3}{4}$ ins. (19.8 cms.). I am indebted to Mr. Oldman for leave to figure this very interesting example.

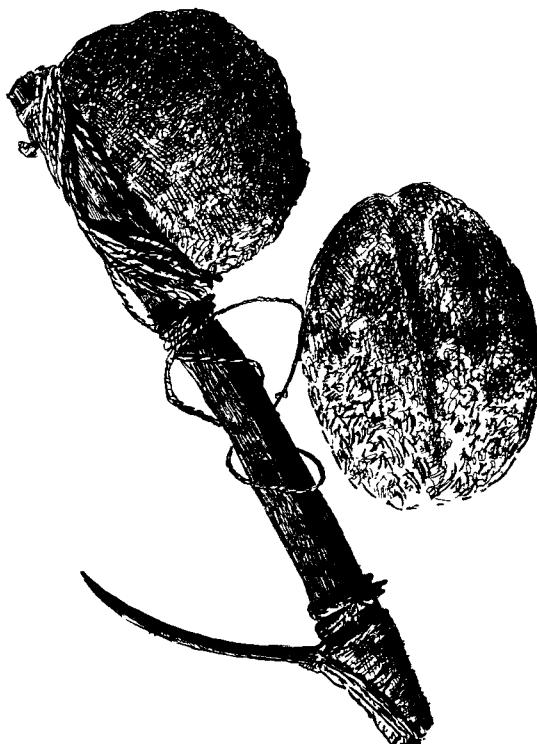


FIG. 13.—HAWAIIAN GROUP.
Academy of Natural Sciences, Philadelphia

Fig. 13 again differs in several details and is the only instance of a squared shaft that I have seen. It is unfortunately incomplete as regards the Cypraea shell, but the figure is useful in showing how the barb, which is of iron, was attached. The photograph for this illustration was kindly sent me by the authorities of the Philadelphia Museum, U.S.A. The locality is given as Kavaii (Kauai).

From San Cristoval in this group comes this very simple contrivance (Fig. 14), which while serving the same purpose yet differs widely from any of the established forms already dealt with. Although Polynesian influence is strong in some of the Eastern portions of the group and might have been responsible for its inception, yet in this case I am inclined to think that its use is a purely Melanesian invention

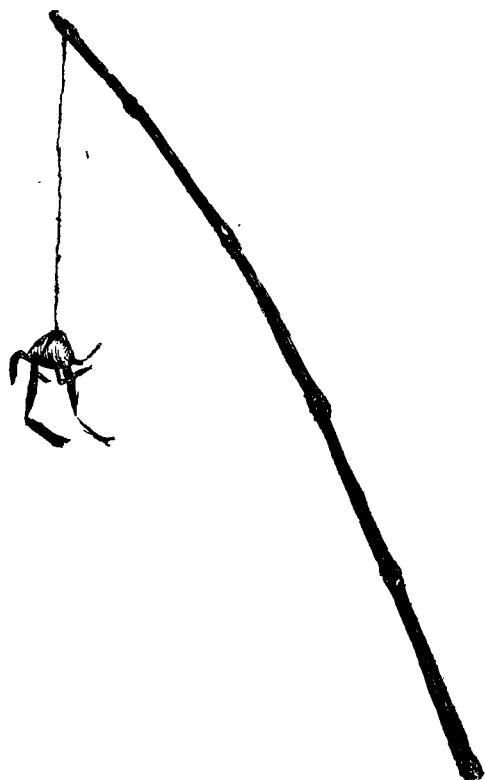


FIG. 14.—SAN CRISTOVAL: SOLOMON GROUP.
British Museum.

derived from the peculiar habits of the cuttlefish. I understand that it is in use in an almost similar form on the shores of the Mediterranean. The strips of leaf attached to the cowrie are stained red, and it would therefore seem that this colour has some special attraction, for in this country and on the South Coast of Ireland red rags are used for identically the same purpose. This very uncommon example is in the British Museum Collection. The rod, which is of bamboo, measures $25\frac{3}{4}$ ins. (65.6 cms.), but in its original state was probably longer. The line which attaches the shell is of twisted fibre, 9 ins. (22.9 cms.) long. In use this contrivance would be carried by a native searching the pools along the shore or on the reef, and not lowered from a canoe.

THE OLDER PALÆOLITHIC AGE IN EGYPT.¹

[WITH PLATES I-IV.]

By C. G. SELIGMAN, M.D., F.R.S.

THE following paper presents the results of the study of a considerable number of flint implements from the high desert of Egypt, for the most part collected by myself during the early part of 1914, when an attempt was made to obtain definite stratigraphic evidence as to the antiquity of implements exhibiting a technique which in Europe would be classed as Chellean, Acheulean or Mousterian.

The sites visited were Abydos, Thebes, Tell el-Amarna, Meir, and the Wady Sheikh.

One result was immediately obvious—for descriptive purposes certain areas can be described as “flintless,” for whereas flints of palæolithic type were everywhere common in the neighbourhood of Abydos and Thebes (where indeed flakes, probably, as will be shown, of Upper Mousterian age, can only be described as overwhelmingly abundant), worked flakes of palæolithic type were not only relatively, but absolutely, scarce in the neighbourhood of Meir and Tell el-Amarna. At Meir, a week’s search in the neighbourhood yielded only five undoubted pieces of Mousterian technique, namely, two small flakes (one point and one scraper) and portions of three other implements, while at Tell el-Amarna even fewer specimens were found, nor were any Chellean or Acheulean specimens found at either site.

With regard to the Wady Sheikh no stones of definite palæolithic type were seen, a result foreshadowed in Dr. H. O. Forbes’ publication,² since of the

¹ In collecting and working up the material I have received the freest assistance from many friends. I would especially mention the late Dr. Sturge, who, when I was embarking on this work in 1914, placed his great collection at my disposal and gave me much valuable advice. Sir Hercules Read, Professor Flinders Petrie, and Mr. Leeds have given me access to the collections with which they are associated. Messrs. Henry Balfour, Miles Burkitt, and Reginald Smith have been of constant assistance in questions concerned with typology and distribution. In Egypt my indebtedness is equally great; without Professor Naville’s hospitality and assistance it would have been difficult, if not impossible, to work at Abydos, and I am also indebted to Dr. Blackman for putting me up at Meir. Dr. Hume, Director of the Survey of Egypt, besides helping me in many ways undertook a special journey to report on the gravels in which I had found worked flints. Mr. G. W. Murray has sent me collections made by himself on new sites in the Eastern Desert, while I would also mention Dr. Borchardt’s courtesy in allowing me to make use of the German House at Thebes. But above all am I indebted to two of my oldest friends, to Mr. A. B. Solomon for helping me collect, label and pack a very considerable mass of stones, as well as for taking a large number of photographs (including those reproduced here), and to Miss M. C. Jonas for the time and care she has ungrudgingly given to the drawings illustrating this paper.

² “On a Collection of Stone Implements . . . discovered . . . on the Plateaux of the Nile Valley,” *Bulletin of the Liverpool Museums*, vol. xi, 1900, Nos. 3 and 4.

numerous implements he figures there is only one which might be considered of palæolithic form. Here, however, specimens were found of early historic date which are valuable from the light they seem to throw on the patination of the high desert specimens of palæolithic technique.

The literature of the subject is perhaps scantier than its importance and interest might suggest. It was in 1882 that Pitt Rivers,¹ then President of the Institute, published his paper in which he recorded the discovery of worked flakes *in situ* in the gravels in the neighbourhood of Sheikh Moussa, the modern burial ground of Thebes. This led to discussions, in which both archaeologists and geologists took part, as to the age of the surface pieces of palæolithic shape found in abundance on the high desert. Dr. Forbes,² Mr. H. J. L. Beadnall,³ Drs. Schweinfurth⁴ and Blanckenhorn,⁵ have all written on the subject and their views have been discussed by Dr. H. R. Hall,⁶ who figures a number of specimens collected by himself. Schweinfurth's latest paper, probably still valuable from the geological side, is vitiated by his determination to see eoliths everywhere, much more advanced implements being regarded as eolithic.

Of more recent literature may be cited Professor Petrie's⁷ discussion of the whole Egyptian stone period and the account by Dr. F. H. Sterns⁸ of a collection formed by Mr. G. W. Murray in the Eastern Desert and presented by him to the Peabody Museum. The latter, with photographic reproductions of every stone in the collection as well as some in the Museum previously, is for the most part in the nature of a *catalogue raisonné*; the former, while it makes certain assumptions and draws certain conclusions with which many will not agree, is valuable principally for its breadth of view and for its record of a precise stratigraphical observation made at Naqada.⁹ Mr. Currelly's recent publication, the catalogue of the worked stones in the Cairo Museum,¹⁰ figures a number of specimens of the older palæolithic age, but the absence of adequate elucidatory letterpress, due largely to the fact that the exact provenance of most of the specimens in the Museum is unknown, greatly reduces its value. On the comparative side for Europe I have found Commont's monograph, *Les Hommes*

¹ "On the Discovery of Chert Implements in Stratified Gravel in the Nile Valley," *Journ. Anthropol. Inst.*, vol. xi, 1882.

² *Op. cit.*

³ "Neolithic Flint Implements from the Northern Desert of the Fayum, Egypt," *Geological Magazine*, 1903.

⁴ *Steinzeitliche Forschungen in Obergypten Zeitschrift für Ethnologie*, vol. xxxvi, 1904.

⁵ *Zeitschrift der Gesellschaft für Erdkunde zu Berlin*, 1902.

⁶ "Palæolithic Implements from the Thebaid," *Man*, 1905, 19.

⁷ "The Stone Age in Egypt," *Ancient Egypt*, 1915.

⁸ "The Palæoliths of the Eastern Desert," *Harvard African Studies*, i, 1917.

⁹ *Op. cit.*, 1915, p. 62 and Figs. 5, 6 and 7 on p. 61; cf. *infra*, p. 136.

¹⁰ *Catalogue Général des Antiquités Egyptiennes du Musée du Caire*. "Stone Implements," by Charles T. Currelly, 1913.

Contemporains du Renne dans la Vallée de la Somme (1914) most useful, while for Africa this applies equally to the papers contributed by MM. de Morgan, Capitan, and Boudy, to the *Revue de L'École d'Anthropologie* (Paris), 1910 and 1911, under the title “*Étude sur les Stations Préhistoriques du Sud Tunisien.*”

The material upon which my own work is based consists of the following series :—

- (i) The specimens collected at Thebes and Abydos in 1914.¹
- (ii) A small collection made in 1908 from the slopes of Thoth Hill near Thebes, the height at which each specimen was found being noted.²
- (iii) A large and valuable series collected by Mr. G. W. Murray from Hammama Wasif, and Wady Dib, sites newly discovered by himself in the Eastern Desert. These sites lie between 26° and 27° N., Hammama being some 40 km. east of Keneh while Wasif is on the other side of the Nile–Red Sea watershed about 100 km. farther east. The Wady Dib is about 160 km. north of Hammama on the Red Sea side of the watershed in an almost waterless region.
- (iv) A number of selected specimens from the Sturge Collection.

The implements themselves may be classified as follows, the “period” given in the second column being that to which they would be assigned if they were of European origin. Forms which, as far as I know, do not occur in Europe, are printed in italics.

Hand-axes, Chelles and St. Acheul.

Hand-axe with borer point

Finely worked ovates St. Acheul.

Points

Side-scrapers Le Moustier.

Borers

Concave scrapers

Crescents

Tortoise point (infra p. 126) ..

Tanged spear and arrow heads ..

Notched flakes

End-scrapers

Concave end-scrapers

Nose end-scrapers

End borers

Asymmetric end-borers

These forms are not specially typical of the Mousterian but are grouped here with the type points and side-scrapers for reasons connected with the localities of the finds, stratigraphy, and patination.

Transitional to Capsian or Capsian.

¹ Including a number collected by Miss Mary S. Johnston, to whom my best thanks are due for the loan of many of her specimens and for other assistance.

² By Thoth Hill I mean the highest hill in this part of the Qurneh hill mass. Its peak, upon which stand the remains of an XIth dynasty chapel, is over 1200 feet, a few feet higher than the Qorn, the great peak overlooking Thebes about a mile south of the Farshut road.

The allocation of the specimens to these periods will be discussed later, meanwhile I will only say that from the morphological standpoint the River-drift types are unmistakable. The Mousterian types, as far as the points, scrapers and borers go, are equally typical and can be paralleled precisely by west European forms, while those that do not resemble European forms can, as I shall show later, be derived from well-known types, or else the process by which they are fashioned will be shown to be identical with those by which the latter were produced.

The great majority of the specimens of River-drift types show a Chellean or somewhat coarse St. Acheul technique; only a few implements are of the fine St. Acheul type with relatively small delicate facets, the flaking of the majority of the hand-axes, though free and unconstrained, and obviously the work of men who knew exactly where each blow should fall to produce a given effect, being decidedly coarse. This relative coarseness is equally marked in the majority of the implements of Mousterian type, being especially obvious in the "points" and Levallois flakes, many with but slightly trimmed edges. These constitute by far the larger number of the implements found upon the high desert, the exceptions to be noted being some few scrapers and certain of the large "crescents" discussed on pp. 124 and 125.

A certain number of specimens cannot readily be referred to either a Chelleo-Acheulean or Mousterian technique. If the west European forms be taken as standards, some of these would be regarded as Aurignacian of the coarser type, or they might be regarded as of the age of the Abri Audi culture (though the Abri Audi point has not been found), and be termed Mousterio-Aurignacian (in Africa Mousterio-Capsian), if it be admitted that transitional forms exist. Personally I am inclined to regard these as highly developed Mousterian, the industry having been modified by Capsian influence from the North.¹

In comparing the specimens from the Nile Valley (Abydos, Thebes) with those from the Eastern Desert, certain conditions and reservations must be kept in mind. In the Nile Valley, especially at Thebes, the carrying away of palaeoliths has been extensively practised, not only by dealers, but also by Europeans who have regularly sent out natives to bring them every decent specimen they could find, so that it is

¹ It being now generally recognized that it is impossible to explain the succession of palaeolithic types by any simple scheme of development *in situ* of each type from its predecessor, there does not seem to be any reason why our current ideas with regard to contact-metamorphosis should not be applied to the races of palaeolithic man in the same way as they are applied to problems of distribution at the present day. On the application of this point of view M. Breuil, who has long regarded the Aurignacians as probably African in origin, and as having colonized the whole Mediterranean basin, has written to me as follows:—"In the neighbourhood of the Sahara, Capsian influence appears to have been exerted up to a period as late as the Tardenoisian and proto-neolithic, due, perhaps, to a condition of affairs analogous to those that produced the northward Capsian-Azilian-Tardenoisian wave which led to the substitution of their civilization for that of the Western Magdalenians. The mixed characters of the races of Ofnet (Bavaria) and Mughem (Portugal), but with the Mediterranean type predominating, accord well with this point of view."

no exaggeration to say that sacks full have been removed each winter, without the least regard to the position or site of collection. Such "collectioneering" could have only one result; the great majority of the larger and better worked and more obviously valuable specimens have been picked up years ago. This especially applies to the hand-axes and crescents, so that there are scarcely any of these left at the present day.¹ The Mousterian implements have not proved so profitable; the native for the most part regards them as mere flakes left over from the manufacture of the more massive types, and although plenty have been carried away, the desert has not been skinned of these to anything like the same extent.

Mr. Murray's collection from the Eastern Desert from new sites discovered by himself is not at this disadvantage, and a large proportion of his specimens are of the Chelles or St. Acheul type, flakes forming relatively a minority.

The environmental conditions prevailing at Thebes, Abydos, and Meir may, apart from the amount of sand present, be regarded as identical. At Thebes there is practically no sand, and the edges of the specimens, even of the most delicate flakes, are perfectly sharp. There is more sand at Abydos, and a number of specimens show the effect of blown sand, especially such as were found near the top of the Wady, sanded up for over two-thirds of its extent, which was our usual mode of ascent to the high desert.

At Meir, where the desert is comparatively low and there is more or less sand everywhere, every specimen of palæolithic type had the crests between the facets smoothed, and its surface finely pitted, in some instances showing a lustrous polish.

I have no first-hand knowledge of the conditions prevailing at Hammama and Wasif, but none of the flakes shows any evidence of the action of blown sand; moreover, Mr. Murray tells me that there is now no sand at Wasif and very little, or perhaps none, at Hammama. Nevertheless, both from Thebes and Hammama a few specimens of River-drift type have had their facets so much worn that they present a generally smoothed aspect, while their patination seems to go deeper and to be very much softer than is usually the case. The condition they present would be accounted for, if it be supposed that they are stones which lay on the surface for some time, precisely at that period when the vegetation-bearing surface layer had weathered away, but before the sandy detritus formed from it had been disposed of, and that it was this detritus which smoothed the crests; just as to-day the sand at Meir and in the neighbourhood of Abydos is giving rise to typical *dreikanter*s.

Before discussing particular types I would point out that flints of both River-drift and Mousterian forms and technique are found at every altitude, *i.e.*, there is nothing, as far as my observations go, in the surface distribution of these flints at the present day to indicate that the one type is more ancient than the other. Thus in 1908, in walking up Thoth Hill and without turning aside to make special search, I picked up Mousterian flakes at heights of 400 (1), 700 (5), 800 (2), 900 (1), 1400 (2),

¹ Thus only one crescent was picked up in the fortnight or so at Thebes in 1914.

and 1500 (6) feet, tortoise cores at 700 (4) and 900 (1) feet and implements of Drift type one at each 700, 1000 and 1400 feet..

The great majority of implements from the Thebaid, whether of Drift or Mousterian type, present a more or less lustrous surface of a yellow-brown, deep brown, brown-red or mahogany colour, or of a tinge of orange flecked with black, while of the two faces of the same implement one is almost always darker than the other. But besides this typical range of surface coloration which, as will be shown later, is due to prolonged exposure to light and weather, and to which I shall refer by the term "palæolithic patina," a certain relatively small number of implements of every type are to be found of the different shades of dull white, "stone" colour and pinkish grey, and these are often irregularly mottled or marbled. As far as my personal experience goes, specimens of these colours do not occur on the high desert plateau;¹ they are, however, by no means uncommon in the wadys and also occur in relatively small numbers in the washouts and debris of washouts which exist, e.g., in the neighbourhood of the Tombs of the Queens.

This distribution was puzzling until a certain number of specimens, all whitish or light grey in colour, had been found *in situ* in the undisturbed faces of gravel cliffs, when it was realised that the lighter coloured pieces found in wadys, predominantly at their edges, i.e., at the foot of the cliffs forming their sides, were light coloured because it was only comparatively recently that they had weathered out of the cliffs.

The two figures on Plate I, being reproduced with a brown ink, give a moderate idea of the difference in appearance presented by similar implements according to whether they have been exposed on the face of the desert or have been preserved in a gravel. Of the two tortoise cores one was found on the surface, the other removed by myself from the hard cemented gravel of Sheikh Moussa; the deeply coloured Levallois flake is from the Sturge Collection, the whitish specimen was found by Miss Johnston in a washout in the neighbourhood of the Tombs of the Queens.

II.

Implements of River-drift Type.—The greater number of these are somewhat coarsely worked, i.e., the final surface is produced by the removal of a comparatively small number of relatively large flakes; but it must not be thought that these tools are poorly fashioned or unskilfully worked, and, as already stated, they were evidently made by men who had in mind exactly where each blow should fall. It may be suggested that it was the certainty of producing the result aimed at that allowed the retention of a considerable portion of the original rough skin of the nodule, as is so often the case. These implements are so well known that it does not seem necessary to describe them at length or to reproduce any number; excellent examples

¹ This observation is borne out by the fact that of the large number of implements from Hammama and Wasif sent me by Mr. Murray, there was only one of greyish-white colour, and here was nothing to show that this has not been found at the foot of a cliff or bank of gravel.

are figured, *e.g.*, by Currelly in the Cairo Catalogue. One of the heavier, rougher type Chellean hand-axes is shown in Drawing No. 1 ; its importance as being derived from a gravel is discussed later, meanwhile attention may be drawn to its characteristic shape.

The specimen from Hammama reproduced as No. 2 is especially interesting, as it is worked into a definite short stout boring point. This has been attempted in two other specimens, from Hammama and Um Selimat respectively, but in neither of these has the same degree of success been obtained. I can find no record of any European implement of hand-axe type and Drift age with a similar boring point, but an approach to this condition is figured by de Morgan, Capitan, and Boudy from El Mekta to the north of the oasis of Gafsa.¹

With these coarsely flaked implements may be compared a small delicately worked ovate, No. 3, from Mahamid, overlooking the Nile Valley, also collected by Mr. Murray ; the work here is of the finest late St. Acheul type. An approach to the fine quality of this disc is shown by a large and decidedly coarser specimen from Wasif ; almost circular in outline, and lenticular in section, its maximum length being 10 cm. and its greatest thickness about 4·5 cm. It is especially interesting that although this specimen was picked up over 100 km. from the site on which the smaller and more delicately worked disc was found, the coloration of the two specimens is almost identical. In both, one surface is orange speckled with black, the opposite surface being of a rather light brown.

Generally speaking the implements of the Drift types from Thebes have perfectly sharp facets, and present no appearance of being water-worn. But this is not invariably true ; I have myself collected three specimens which seem to present every appearance of water action. The first of these is a small roughly worked hand-axe of early Chelles type rather over 8 cm. long, retaining much of the original crust of the pebble ; the second is a rather larger and heavier tool with the point missing, the fracture being old ; while the third is a distinctly better worked lenticular disc, one surface being much more convex than the other ; this specimen has lost a portion of its periphery by old fracture. In all these specimens there is a certain smoothing of the crests between the flake scars,² and the patina, thicker and softer than is usually the case (so soft that it is scratched readily by a steel tool), is of an orange brown colour speckled with black, and appears worm eaten, the chemical change having gone so far that the surface has begun to disintegrate.

As will be shown later (*cf.* pp. 138–140), a surface of this colour indicates prolonged exposure on the face of the desert, the condition which has given their characteristic colouring to the great majority of implements of palæolithic types from the Egyptian deserts. Its interest in these particular instances is that it indicates that the exposure took place after the implements had become water-worn.

¹ *Op. cit.* 1910, p. 110, Fig. 14.

² I am indebted to Mr. H. Balfour for the suggested use of the terms flake scar and flake bed.

To the River drift group must also be referred a rare form of implement, long relatively narrow, prismatic or oval in section, or almost blade-like. The finest specimens of this type that I have seen are three of a deep mahogany brown colour in the Ashmolean Museum, labelled "Wadijen [Wadyen] Thebes," and there are also broken specimens in the Sturge Collection; No. 4 represents one of these.

Implements of Mousterian Type.—Many of the Mousterian flakes from the high desert of Egypt differ somewhat in form from those commonly found in Europe. A considerable number are longer and narrower, such as No. 5, which is nearly 11·5 cm. long, and scarcely 3 cm. broad, or their form may immediately suggest a spearhead in a way which European specimens do not (No. 6).¹ With regard to technique, the flaking is commonly coarser than in European implements (though a few of the finest scrapers are exceptions), and there are many specimens in which the retouching is of the slightest; this is especially true of many Levallois flakes. Nos. 7 to 21 give a general idea of the facies of this industry, a number of the specimens being relatively coarse, thick and heavy, *e.g.*, the points Nos. 8 and 9 and the scraper No. 13 removed from the mass of gravel shown in the photograph reproduced as Fig. 2 of Plate II.² Borers or awls, though relatively uncommon, constitute a definite type of Mousterian implement from the high desert. The specimen shown as No. 15, bought by Dr. Sturge in Luxor, is an unusually fine example. It consists of a typical Mousterian flake showing bulb of percussion and faceted butt. It is of rather dark grey colour, *i.e.*, it is only slightly patinated. Another less beautiful specimen collected by myself shows an old palaeolithic patina which has exfoliated in parts, allowing a rough rusty red surface to appear in patches, which, when magnified, are seen to have irregular edges which look as if worm-eaten. A portion of the original surface forms a stop, and the point appears to have been retouched at a period subsequent to its original manufacture. Another borer which may be considered here is that reproduced as No. 16. It may perhaps be regarded as a more advanced specimen showing Capsian influence.

Notches (Fr. *encoches*) are common; No. 20 shows a fairly typical notched flake, only one surface of this implement is shown, but the base also bears a less crescentic notch worked in the inverse sense. Other implements bearing side notches are represented in Nos. 19, 21, 39, 47, and 48, while the asymmetric boring points referred to later (*infra*, p. 130) are produced by working a notch to one side of the median plane of a pointed and somewhat keeled flake. No. 19 is a usual type of rather heavy Mousterian scraper, but remarkable in that it bears three notches on one edge.

¹ Mousterian points which, to judge from their appearance, are frankly spear-heads, are not quite unknown in Europe. Commont figures two (*op. cit.*, Fig. 28), one having a notch near its base, destined, he suggests, to prevent the attachment slipping.

² De Morgan, Capitan and Boudy (*op. cit.*, Fig. 28) figure from El Mekta in Tunisia a specimen of much the same size and character, *i.e.*, retaining much of the skin of the nodule and showing the same coarse work.

The tortoise core, called *dufr el homar* ("donkey's hoof") by the Fellahin of the Thebaid, who have been accustomed to collect implements, is one of the best characterised of the more commonly found artefacts. It is the core from which a Levallois flake has been struck, and in its most typical form consists of an irregularly circular, lenticular mass, plano-convex in section (it may indeed be almost hemispherical), the flat face being really slightly concave, and formed in the main by the scar left by detachment of the flake; the periphery of this face commonly shows a certain amount of accessory flaking which serves to define the edge of the flake removed. The convex face is worked from the centre outwards so as to present a number of facets radiating more or less regularly from the summit of the nodule, a considerable portion of the outer crust usually being preserved. A notch at one portion of the periphery indicates the position of the point struck to remove the flake. Specimen No. 22, from the Sturge Collection, is the best example I have seen of this form of core; it is almost hemispherical and measures about 9×8 cm., being roughly 4 cm. thick.

Such typical specimens are not common; in its more usual form the core is so trimmed as to have very much the shape of the half of a somewhat flattened pear, the notch indicating the point at which the core is struck, being situated at the broad end of the pear. Such cores are not generally lenticular in cross section, the two surfaces being approximately parallel, probably because the pebble selected to form the core was flattened rather than spherical. In these cores, much of the back, i.e., the surface opposite that from which the Levallois flake is struck, is represented by the original skin of the nodule of which, as already stated, the two major opposite surfaces were flat rather than domed. Specimens Nos. 26 and 27 illustrate these points; No. 26, from Thebes, is 9·5 cm. \times 7·5 cm. and 3·5 cm. thick, while No. 27, from Abydos, is almost as long, and is not quite 2 cm. thick.

Comparatively few of these cores reach 10 cm. in length. On the other hand, so many are between 8 and 10 cm. that this almost seems to be a type length, and this especially applies to the cores that have been worked into tortoise points (*infra* and p. 126). The largest tortoise core I have seen from Egypt was collected by Mr. Murray on the Wady Dib site. It is 13 cm. long, 12 cm. at its broadest, and nearly 5 cm. thick; its flake bed measures nearly 11 cm. by 8 cm. I have not myself seen any flakes of this size, the largest I have handled is subtriangular, a trifle over 9 cm. long, and about the same breadth.

There are two implements which have been developed from the tortoise core. The first of these is the large hollow scraper, an extremely well defined form for which I suggest the term "crescent." The second implement is a heavy drawing or dragging point which is worked on the narrow end of the less domed tortoise cores and for which I propose the name tortoise point.¹

¹ Tortoise points not so much because they occur on tortoise cores, but because this stout, rather blunt point recalls the beak of a tortoise.

Although crescents are well known and have been figured by almost every writer on the stone implements of the Egyptian desert, and although Dr. Sterns has made the valuable suggestion that they are a local form limited to the Thebaid, their origin from the Mousterian tortoise core has not, I think, been noticed hitherto.

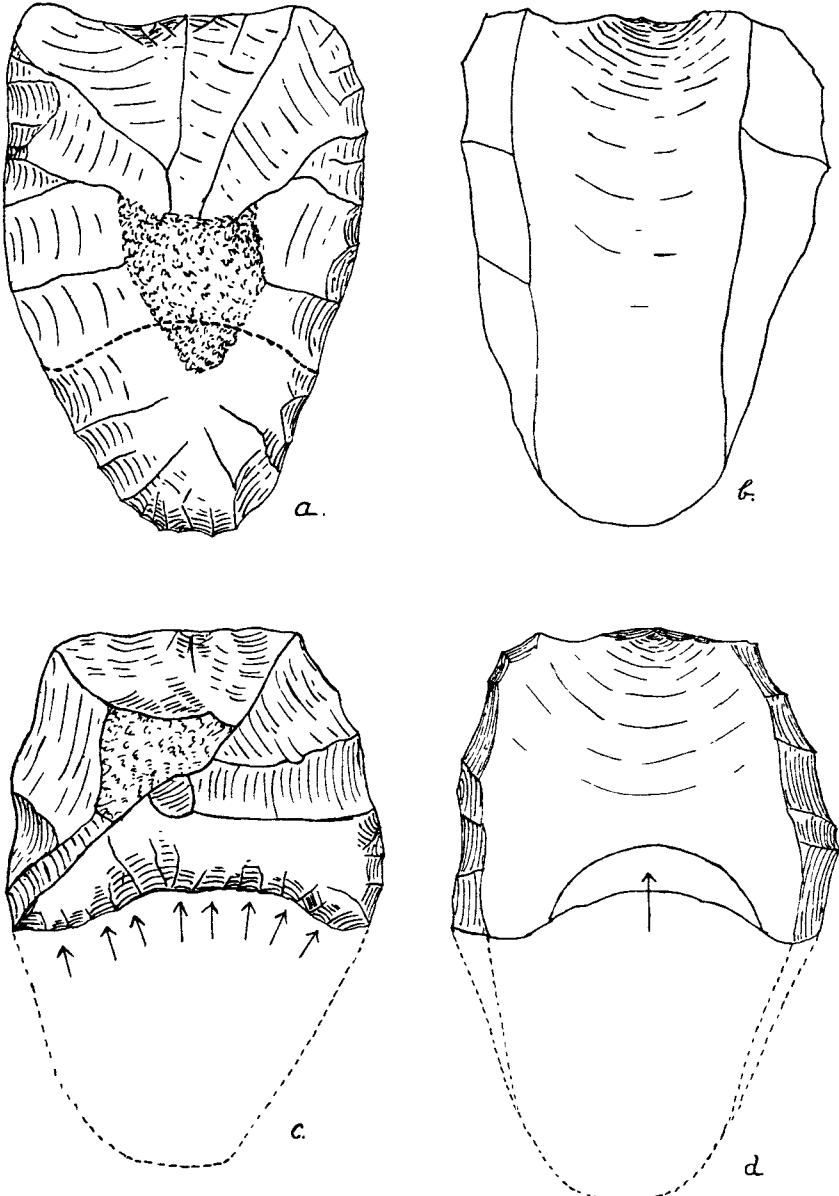


FIG. 1.—DIAGRAMS SHOWING MANUFACTURE OF CRESCENT FROM TORTOISE CORE.

Text-figure 1, (a) and (b) represent somewhat diagrammatically the two aspects of a tortoise core from the neighbourhood of Thebes, figures (c) and (d) represent the two aspects of a crescent, (a) and (c) show the convex surface with part of the original

crust left *in situ*, the dotted line in (*a*) marking off the area that has been broken away from the core to give the scraping edge of (*c*). Figures (*b*) and (*d*) show the plane surfaces of the two specimens, the arrow at (*d*) pointing to the single crescentic flake that in a number of these implements has been removed from the working edge, probably before the final touches were given to the opposite surface. These crescents vary somewhat in the accuracy of the flaking of the plane surface, as well as in the size of the crescentic flake removed from the working edge : often this extends from limb to limb, *i.e.*, forms the whole length of the working edge of the flake-bed surface, as in the two specimens figured here (Nos. 24 and 25).

No. 24, from the neighbourhood of Keneh (Sturge Collection), is, as far as form goes, a typical specimen, but its colour, greyish on one surface and grey-brown on the other, is unusual and indicates that it has weathered out of a gravel relatively recently (*cf. supra*, p. 120). No. 25, also from the Sturge Collection, is the only crescent I have seen that has been made from a Levallois flake (nor have I noted any other specimen in literature) ; it shows the usual brownish palæolithic patina and has a faceted butt.

With regard to the use of these crescents, it may be suggested that they were used to trim saplings and the branches of trees, and that their chief use was to fashion the shafts of spears, a suggestion that will, I think, be the more readily accepted by those who have watched a Melanesian smooth a spear shaft with the tusk of a wild pig, an implement having, as regards curvature, very much the working edge of these crescents. From one point of view No. 12 may be regarded as a much simpler form of crescentic scraper, but its colour and general appearance indicate that it is broadly contemporaneous with the carefully made crescents. In this specimen a large rough flake has been trimmed to crescentic form by the removal of a series of coarse flakes from one edge, the trimming being entirely at the expense of the inner surface of the flake (*i.e.*, that showing the bulb).

I have already alluded to Dr. Stern's suggestion that the crescents were a local form peculiar to the Thebaid. The occurrence of such rough but effective implements as that under consideration, and the fact that no crescent was found by Mr. Murray on his untouched sites in the Eastern Desert, go far to support Dr. Stern's view.

The tortoise point, the second class of tool which is typically derived from the tortoise core, is more difficult to describe. Regarding for the moment the face of the tortoise core, from which the Levallois flake is removed, as the upper surface, this tool consists in the production at its narrow end of an upturned point or beak. In its simplest form this is produced by the meeting at the narrow end of the core of the two planes bounding the flake-bed left by the removal of the Levallois flake, and of a facet constituting a third plane joining these at an angle, produced by striking off a flake from near the point of the lower (convex) surface of the core. It follows that the point or beak should be triangular in section, as it actually is in many instances, while in others it is somewhat pyramidal owing to secondary flaking, *i.e.*, in those

instances in which the operator did not succeed in removing one sufficiently large flake at a single blow.

Text-figure 2 will serve to make this description clearer. The upper figure represents somewhat diagrammatically the face of a tortoise core such as is represented in Nos. 23, 26 and 27. It will be noted that the lower part of the scarbed (F) of the Levallois flake is bounded by two longer, narrower facets (lettered 1 and 1a), and their intersection gives rise to a crest or ridge. This crest (R) and its two bounding facets are terminated abruptly by the facet numbered 3

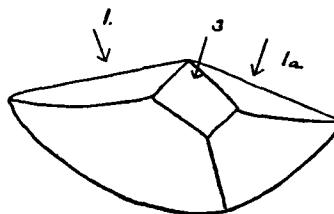
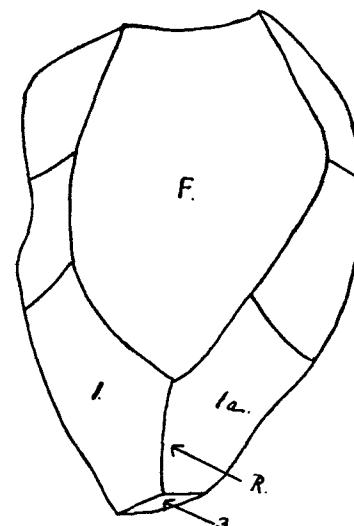


FIG. 2.—DIAGRAM INDICATING MODE OF
MANUFACTURE OF TORTOISE POINT.

produced by a blow struck on the opposite surface of the stone. This is shown diagrammatically in the lower figure, which represents an end-on view of the "point." Nos. 26 and 27, which are drawings of actual implements, show that instead of one blow to produce the terminal facet, a good deal of retouching was sometimes necessary. Text-figure 3 is a dorso-lateral view of a specimen in the Sturge Collection, uncommon in that the "point" has been worked on an unusually well-domed tortoise core. The actual point is well shown as well as the minute irregularities in the crest immediately below it, due to use.

The form of these "tortoise points," as I propose to call them, indicates that they were used as a heavy drawing point, *i.e.*, with a drawing or dragging motion while the hand exerted considerable pressure. In a certain number of examples the distal portion of the crest, that nearest the point, shows minute abrasions, additional evidence in support of the suggestion that this implement was used with a drawing motion, considerable pressure being exerted at the same time. The only grip allowing this is that shown in Fig. 1 of Plate II, the base of the stone being gripped between the bent fingers and the ball of the thumb and drawn steadily away from the body,

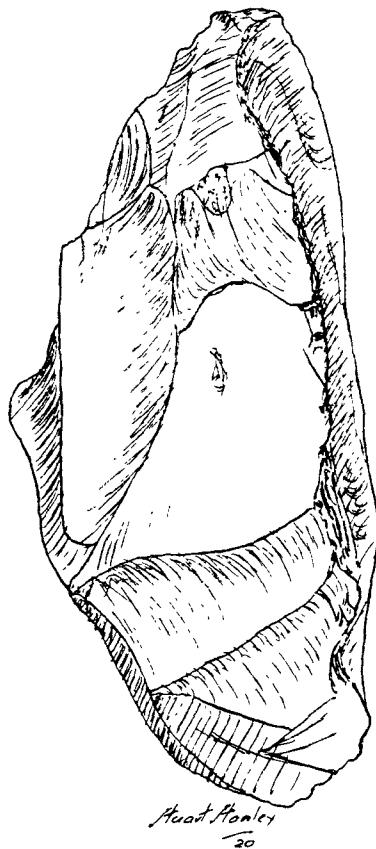


FIG. 3.—TORTOISE POINT IN DORSO-LATERAL VIEW.

Sturge Collection. $\times \frac{1}{2}$.

the implement itself being but slightly inclined to the surface it is desired to cut. The suggestion may be made that these tools were used for cutting hides; such a point would furrow or cut a stiff sun-dried hide—as those used by the Veddas—just as it does a piece of stout millboard. Fig. 29 illustrates a specimen in which the point and crest have been extremely worn by use.

This form of implement has not, so far as I can discover, been recognised in Europe hitherto; it is probably uncommon, but that it exists is suggested by the

reproduction by Commont¹ of figures of two “instruments moustériens” from St. Acheul, of which one at least seems to represent the “new” implement.

Although the great majority of tortoise points were worked on tortoise cores, as in Nos. 26 and 27, the “new” tool also was at times made independently. No. 28 represents a typical tortoise point worked on the end of an elongated somewhat bi-lobed pebble, only so much of the crust having been removed as was necessary to produce the implement. A carefully made tool from the Wady Dib shows a form and technique suggesting its relationship to the tortoise core, but also that it was made by an expert who felt no necessity to conform closely to the type, while No. 30 shows the “point” reduced to its simplest terms. An oval nodule has been split longitudinally and roughly worked on its broken surface to produce the necessary converging facets at one end, a single flake was then removed from the natural rounded surface, the whole of the rest of the skin of the nodule being retained.

I have already stated that I regard the Mousterian technique of Egypt—perhaps this applies to the whole of North Africa—as having developed farther than in Europe. In no feature is this more obvious than in the development of the tanged spear or arrow-head.² No. 31 represents a thick heavy point of greyish colour (marbled) from the gravels of Sheikh Moussa. It is a somewhat unusually well-shaped piece for Egypt, but apart from the condition of its proximal end it does not differ greatly from such typical Mousterian implements as Nos. 7 and 18. Yet the working at this end entirely alters its character, for it indicates a short broad tang, to produce which the dorsal aspect of the flake for the proximal fifth or sixth of its length has been broken away, so as to produce a less thick base, while the edges of the stone have been trimmed as nearly as possible symmetrically to assist in the production of this peduncle or tang. On the ventral surface the bulb of percussion has been removed almost entirely.

The next specimen, No. 32, from the Sturge Collection, is a longer, narrower point with a tang which occupies nearly a third of its length; the base of the tang is oval

¹ Commont, *op. cit.*, Fig. 59.

² With regard to the classification of these tanged points as Mousterian, there is evidence from other sites pointing in the same direction. Mr. Burkitt tells me that M. Peyrony has recently found a tanged point of undoubted Mousterian date at La Ferrasie in the Dordogne. Turning to Africa, the Abbé Breuil writes me that in Algeria, Monsieur M. Reygasse has found a Mousterian industry, including tanged points (*points pedonculés*), associated with a definitely palæolithic fauna, and underlying a thick bed of alluvium. Moreover, M. Breuil regards a whole series of tanged arrow heads from sites in the neighbourhood of Tabelbala oasis in Southern Morocco (29° N. Lat. and 6° W. Long.) as of Mousterian date. The industry, as he writes me, includes discs, flakes, points, scrapers, coarse blades of Mousterian appearance, and also large pedunculated points or scrapers, occasional burins and a few broad and long laurel-leaf blades. M. Breuil considers this industry as “une industrie Moustérienne évoluant au Solutréen.” For some account of these tanged points cf. R. Tarel, “Gisements préhistoriques de l'oasis de Tabelbala,” *Revue Anthropologique*, vol. xxiv, 1914, pp. 312–355. I have seen and handled many of these points, and I venture to say there can be absolutely no doubt as to their being arrow-heads or the points of light spears, the date being the only matter that can be open to discussion.

in section, the proximal end of the blade, including the bulb of percussion, having been carefully worked to this form; the colour of the specimen is medium brown with a lustrous surface, and though Dr. Sturge bought it in Luxor, I fully agree with him that it is a surface piece from the high desert. No. 33 represents a smaller point picked up by myself on the high desert near Abydos, at a height of about 700 feet. It is obviously a spear or arrow-head destined to be tanged, but with only the beginning of the tang actually formed; the edges have been worked away symmetrically towards the base, and the thickness of the blade immediately distal to the butt has been reduced by one or more blows delivered at opposite but corresponding points on each side of the butt. The specimen is of a medium brown colour, and has a lustrous surface.

In both these points the full longitudinal curvature of the flake from which they have been fashioned has been preserved, no attempt having been made to lessen this by under-trimming the point of the blade. All three specimens present the faceted butt.

I may here refer to another smaller point, also with faceted butt, with one side trimmed away symmetrically just above the butt, with a natural concavity on the opposite side. A small portion of one edge of the flake has been trimmed away from the under (bulbar) surface. This specimen, No. 34, is of a dark brownish-red and was found on the plateau above Thebes. If not itself an arrow-head it is at least a form from which the latter might easily be derived.

The point from the high desert at Thebes reproduced as No. 35 is provided with a broad roughly-worked lateral tang, produced by trimming away one edge towards the base so as to give rise to a definite shoulder. Apart from this, and the more careful working of its pointed extremity, this implement is of much the same character as regards size and weight as No. 31. That such shouldered points represent a definite type seems to follow from the fact that there is a similar though slightly larger specimen with precisely the same working of the tang (but with the point broken off) in the Peabody Museum (Harvard).¹ This has been figured by Dr. Sterns, and a tracing from his photograph with the missing part indicated is given here for comparison.

It will be noted that the Mousterians of the Thebaid showed considerable eclecticism in their attempts to produce tanged points. Even if No. 32 be regarded as Capsian, Nos. 31 and 35 are clearly independent of each other genetically.

Capsian Forms and Forms Transitional to Capsian.—It has already been mentioned that relatively long narrow "points" such as those illustrated in Figs. 5 and 6 occur much more frequently than in the Mousterian of Western Europe. Whether these be regarded as themselves evidence of Capsian influence, or as a useful variation which arose in the Mousterian culture apart from foreign influence, it can scarcely

¹ *Op. cit.*, Pl. X, Figs. 69 and 70. With the point missing, this form of implement might easily be regarded as a large hollow scraper.

be doubted that their existence would make easier the passage to full Capsian types. A long point with trimmed edges might easily give rise to such a blade as No. 36, with a point that is almost a borer. Nor should it have been difficult to arrive at a beak-ended specimen. Again, such a long narrow blade as No. 37, with one edge definitely trimmed, the other, and especially the distal end, showing signs of wear, is not very far from an end-scraper, a rough hollow-ended end-scraper (as No. 38), or even a transverse end-scraper (No. 39). Another possible mode of origin would be by the retouching of a long narrow point which had been broken across transversely. Such, indeed, may have been the mode of production of No. 40, an end-scraper of light grey colour, removed from the hard cemented gravel slightly above 'Elwa el Dibban. The more typically Capsian implements include end-scrappers on long flakes with trimmed edges (Nos. 41 and 42), nose end-scrappers (No. 44), and blades termi-



FIG. 4.—SHOULDERED POINT.
Peabody Museum. $\times \frac{3}{4}$.

nating in a beak which recalls a *burin* (No. 45), though morphologically it is not one. Notched forms also occur; No. 46 represents a transverse end-scraper with two opposite lateral notches, while the small implement reproduced as No. 47 presents three notches, the third being produced by inverse flaking on the opposite face to that drawn. Less typical are such asymmetrical end-borers as those shown in Nos. 48 to 51. These present boring points situated asymmetrically at the end of flakes with trimmed and notched edges.

III.

Apart from the suggestions offered by the form of the stones themselves, what evidence is there that these implements are of palæolithic date? Clearly the evidence

may be sought in three directions, viz. :—(1) the discovery of implements associated with the remains of an extinct fauna, or ancient type of man ; (2) the discovery of typical implements *in situ* in strata of determinable pleistocene age ; (3) the implements themselves may present a type of work which, in Europe, is only found in artefacts of a particular palaeolithic age. It is obvious that the last criterion is not an absolute one, and arguments based on it alone might be upset at any time by the discovery of post-quaternary implements showing the particular type of work. Nevertheless, in the present stage of knowledge it cannot be ignored, and I shall later return to it with the reservation above stated. No discovery of the type referred to in (1) has yet been made in Egypt, but with regard to (2), the existence of implements in undisturbed gravels of pleistocene age, I hope to show that this condition has been fulfilled.

As the evidence for the existence of palaeolithic implements in pleistocene gravels is derived from the neighbourhood of Thebes, it is necessary to give a brief account of the geography, and, as far as I am capable, of the recent geology of the district.

The valley of the Nile in the neighbourhood of Thebes consists of an alluvial plain some 10 kilometres wide, from which rises the limestone plateau of Lower Eocene age¹ which constitutes the greater part of the Western Desert. Between the alluvium and the slopes of the plateau there lies a belt of sands and gravels of Pleistocene age, consisting of wash from the plateau and its foothills.

The edge of the plateau, and the more recent deposits between it and the alluvium, are cut across by numbers of wadys, only the most important of these being shown on the sketch map,² where they are indicated diagrammatically. The general character of the edge of the plateau, the lower courses of its wadys, and the gravels deposited beyond the wady mouths are shown in the photographs reproduced in Plates III and IV, which were taken to show as much as possible of the ground worked over, including the lower part of the great wady locally known as Wadyēn, literally “the two wadys.” This is formed by the confluence of two main affluents, a southern coming from the valley of the Tombs of the Kings, and a northern “draining” a wide area to the north, including the slopes of Thoth Hill. The two wadys meet and fuse under the western flank of the low isolated hill called ’Elwa el Dibban,³ above which its banks soon become low cliffs some 10 feet high.⁴

Above this the younger gravels give place rather abruptly to older deposits of the same general character but of much greater depth, so that about a mile and a half above ’Elwa el Dibban the banks of the wady are some 200 feet high, formed of

¹ This is not absolutely accurate ; there is exposed in this area a narrow belt of limestone of Cretaceous age, underlying the Eocene.

² Slightly modified from Schweinfurth’s map 1 : 25,000 (Berlin, 1909), which is itself based on Wilkinson’s map of 1830, and the Cadastral Survey of 1904.

³ In the map this hill appears as larger, higher, and altogether more important than it really is.

⁴ It should be noted that this and the following remarks refer only to the northern or main affluent ; I have not examined the branch from the Tombs of the Kings.

irregular bands of gravel and finer material, described by Dr. Hume as "interbedded conglomerates and marls and limestones and clays, near base much false bedding." These gravels apparently cease at an elevation of about 300 feet above the cultivation, and certainly the high terrace (*cf. infra*) is formed of older material.

Dr. Hume recognizes three terraces:—

(A) A high terrace several hundred feet below the main scarp of the plateau, consisting of reassorted marls and coarse gravels. In the valley immediately to the north of the valley of the Tombs of the Kings this terrace is 112 metres above present Nile level. Upon the surface of one of the tongue-shaped projections of this terrace into the Wadyēn (Plate IV, Fig. 2) were found flints of Mousterian type showing the characteristic palaeolithic patina, the presence of hammer stones, cores and flakes in immediate relation with each other seeming to indicate the presence of an actual chipping place.

(B) A middle terrace constituting a broad plateau which at the point where measured is some 88 metres above Nile level. On its surface are many patinated implements, often occurring in patches. This terrace sends out broad spurs into the plain.

(C) The middle terrace, a low-level terrace "occupying the valley from a line about one kilometre east of the limestone marl bluffs [the high terrace] to the borders of the cultivation, and also extending far up into the narrow valleys which have cut their way through the limestone marl terrace. . . ." ¹ This terrace is noted by Dr. Hume as being some 53 metres above Nile level where observed. It is in the gravel of this terrace that the greyish unpatinated implements so often referred to in this paper were found *in situ*. From a sketch map sent me by Dr. Hume it would appear—the responsibility for these deductions is entirely my own—that the implementiferous gravel immediately above 'Elwa el Dibban is very roughly some 40 metres above present Nile level, while the height above Nile level of the Sheikh Moussa gravel may be something less than half of this.

Working from the edge of the cultivation towards the desert, the modern burial-ground of Qurneh, known as Sheikh Moussa, occupies part of the wide embouchement of the Wadyēn, which has here cut its way through a firmly cemented gravel so hard that it is with difficulty that its elements can be chiselled out. This gravel forms a definite wall or cliff on the western side of the wady, honeycombed with rock tombs of the dynastic period, whose smooth facings and sharply defined edges bear testimony to the hardness of the gravel in which they are cut. Then comes the confluence of the two main constituent wadys already mentioned, the northern affluent passing under the flank of a peninsular outlier of the much dissected thick gravel deposit which forms the edge of the high desert. This outlier, which may be called Pyramid

¹ This quotation, as well as the other statements concerning these terraces, are taken from the MS. of "A Preliminary Report of the . . . Terraces of the Thebes Area," which Dr. Hume most kindly sent me and which will, it is hoped, be published in *The Geological Magazine*.

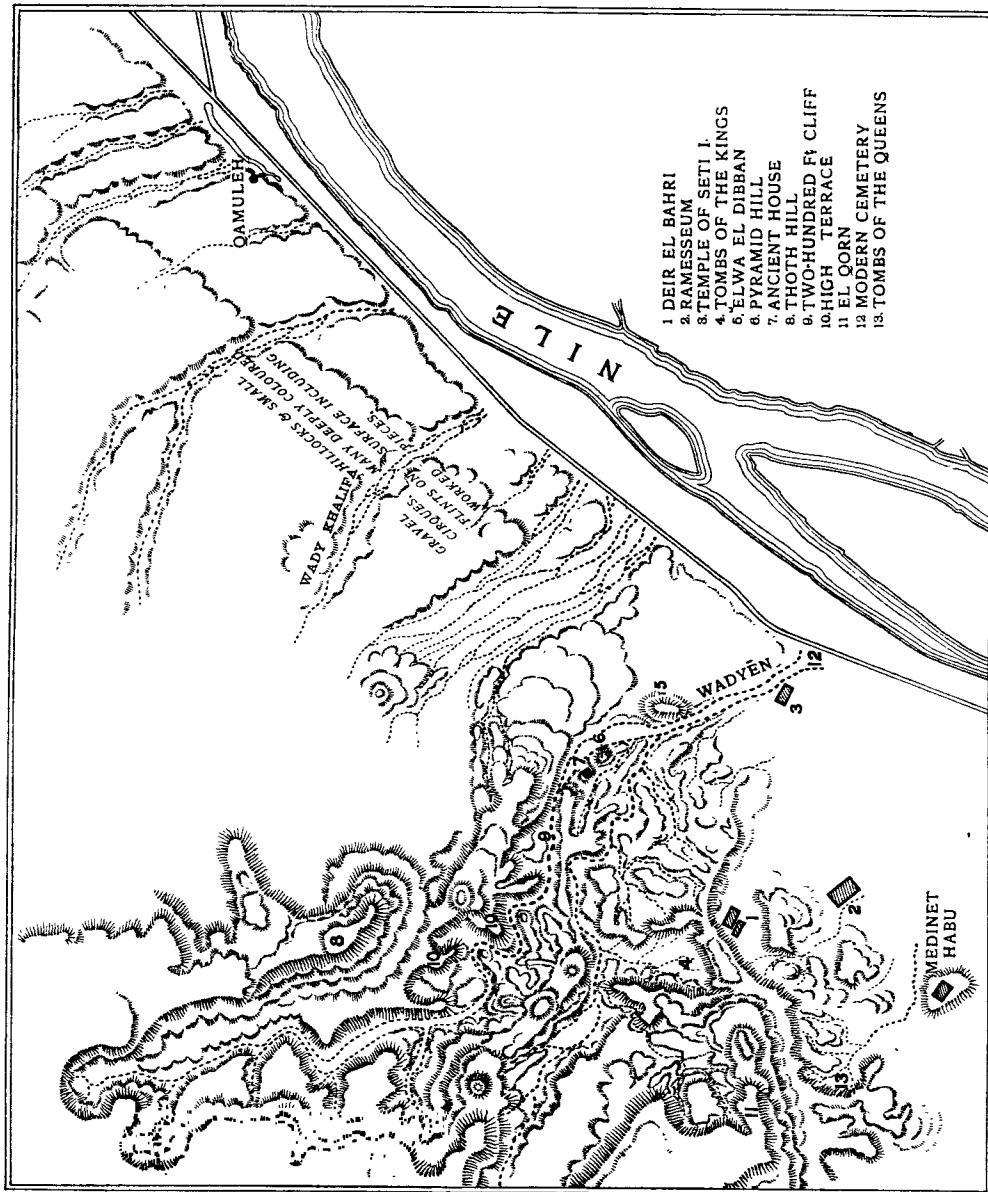


FIG. 5.—SKETCH MAP OF WADYÉN AND NEIGHBOURHOOD.

Hill, is a projecting tongue of the older but still pleistocene deposits already referred to as reaching a thickness of some 200 feet, a portion of which is shown in Plate IV, Fig. 1. The hill bears on its "neck" a mud hut, said to be an old look-out station (called "ancient house" in the sketch map). These landmarks and the general character of the country are well shown in a photograph reproduced as Fig. 1 of Plate III, taken from a position somewhat to the south-west of the mud hut. This shows the old look-out house (marked on sketch map and also shown in Text-fig. 6) and beyond it Pyramid Hill, which partly masks the smaller distant mass on the left bank of the wady, which is 'Elwa el Dibban. The dark line in the distance represents the cultivation, a light streak in its midst indicating the Nile.

From Thebes to Qamuleh, a distance of some eight miles, the geological map shows a breadth of five to six miles of pleistocene deposit between the alluvium and the edge of the limestone. East of the Wady Khalifeh the country presents a vast gravel flat intersected by old stream beds with low gravel banks. These banks contain more sand than at Thebes and are far less firmly cemented. Farther up towards the hills are masses formed by the dissection of a somewhat higher plateau.

Of the Wady Khalifeh itself it was only possible to make a rapid examination of the lower portion; here its banks are formed of gravel which ceases farther up, except as a central deposit, filling up the floor of the wady in which streams have cut smaller banked courses. It seemed clear that the big lateral gravels are older than the central gravel, and their appearance suggests that they had been sculptured to substantially their present form before later detrital gravels partially filled up an originally deeper wady (carrying down with them the whitish palæoliths which are now to be picked up in the wady bed).

The first artefacts were found *in situ* in the miniature cliffs, 8 to 10 feet high, which form the banks of the wady above 'Elwa el Dibban; later specimens were found in the cliff edge forming the boundary of the Qurneh burial-ground—it was here that Pitt Rivers discovered humanly worked flakes in 1882¹—and also in the gravels behind Qamuleh, some eight miles north of Thebes. Although by prolonged examination it was possible to find artefacts in all these gravels, it soon became evident that even weeks of search would yield only a small number of worked implements of definite type, and as soon as implementiferous gravels had been found and the definite character of the surface—white or greyish—of the implements they held established, the laborious task of scanning every inch of the gravel face was given

¹ *Op. cit.*, pp. 389–392. These specimens are now in the Pitt Rivers Museum, Farnham, Dorsetshire, where I have been able to examine them. Taken by themselves it is probably true to say that not one of them is sufficiently well made to permit of the statement that it is of a definite type. But coming from a gravel of admittedly Pleistocene age, one specimen, that represented in Fig. 25 of Plate XXXVI, must be regarded as a very rough Drift form, while one of the flakes (Fig. 23, Plate XXXV) appears to present the remains of a faceted butt, and may be considered to be Mousterian.

up and a careful search made for worked stones with similar whitish surface among the debris that had accumulated at the foot of the cliffs forming the banks of the wady. Here were found a considerable number of implements, flakes, and cores, which clearly had slowly weathered out of the cliffs and fallen to their bases, where they had remained undisturbed.

The old estuary of the wady, now the broad gravel surface at Sheikh Moussa in the neighbourhood of the modern burial-ground, was also searched with good results, and so many implements were collected that it became possible to appreciate the gradually darkening coloration, and to state that the gravels contained hand-axes of Drift type, although no hand-axes were actually found *in situ* in the gravels.

This was the position, as I knew it, in the early part of this year (1921), when

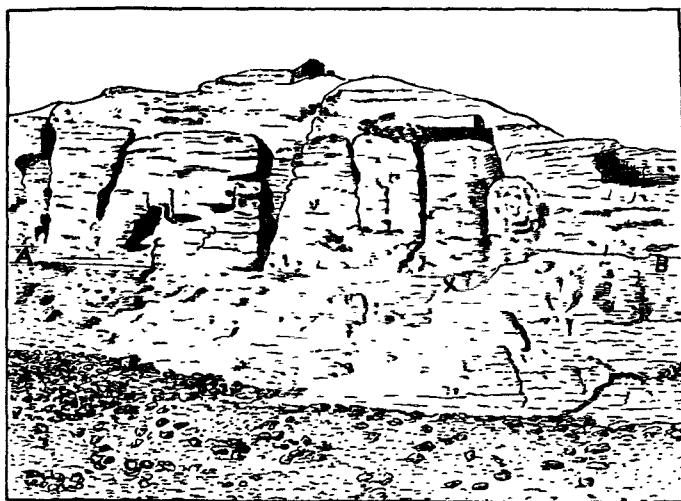


FIG. 6.—CLIFF FACE BELOW OLD LOOK-OUT HOUSE (7 ON MAP, P. 133),
SHOWING POSITION X IN WHICH HAND-AXE WAS FOUND.

Mr. Smith drew my attention to a number of specimens presented to the British Museum by Mr. Montague Porch, removed by himself from the cliff face of the north bank of the northern affluent of the Wadyēn, immediately below the old watch-house. Among these is a typical hand-axe (B.M. 1919, 12-27, 68) with greyish-white surface, while the photograph of the site which accompanies the specimens indicates that the level at which these were found is about one-third up the cliff face. Fig. 6 is a rough sketch (from Mr. Porch's photograph) showing the position in which this important specimen was found.

At this point it will, I think, be convenient to give lists of implements of definite typological form found *in situ* in the gravels, and of those of definite types, the appearance of which showed that they had but recently weathered out, found in wash-outs or banks of wadys.

<i>In situ</i> in gravels :—	Recently weathered out :—
Chelles hand-axe (Mr. Porch's specimen).	Chelles hand-axe (No. 1).
Levallois flake with trimmed edge. (Plate I, Fig. 2.)	Rough hand-axe of Drift type.
Massive Mousterian point (No. 8).	Mousterian point (Nos. 7, 18).
Massive Mousterian scraper (No. 13).	Mousterian point, ? spear-head (No. 5).
Tortoise core. (Plate I, Fig. 1.)	Mousterian side-scraper.
Transverse end-scraper (No. 40).	Tanged Mousterian point (No. 31).
Flakes with notches (Nos. 21, 47).	Asymmetric end-borer (No. 51).

Apart from Mr. Porch's hand-axe, the above refer entirely to my own finds; to them should be added, in untouched gravels, two tools of hand-axe type and a nucleus, probably Mousterian, found by Petrie¹ in a bed of gravel at the foot of the cliffs at Naqadea at depths respectively of 2, 3, and 5 feet. The specimens found by Pitt Rivers² and now at Farnham, though less typical, may also be referred to here, while among specimens recently weathered out of gravels should be included a remarkably fine Chellean hand-axe with the point missing, slightly rolled, with chalky-white surface in the London University Collection (University College), and a coarser specimen more rolled, with similar surface as regards colour, bought by myself at Luxor.

The geological age of the gravels of Sheikh Moussa and the Wadyēn seems incontestable; not only are they shown on the geological map as of Pleistocene age, but my friend Dr. Hume, Director of the Geological Survey of Egypt, went over the ground with me and confirmed my belief that the white gravels in which flakes were found *in situ* were pleistocene, as also are the gravels forming cliffs some 200 feet high farther up the wady, though these are older. Both are made up of fragments of still older gravels and contain *Lucina Thebaica*, the typical Lower Eocene fossil of these parts. It follows that the scrapers and points and nuclei discovered in these gravels are also of Pleistocene age, and as many of them are similar in form and of identical technique with Mousterian specimens from Western Europe, there remains no doubt that these implements are of palaeolithic age, and it may be inferred that the gravels in which they are found were deposited at a period corresponding roughly to the Mousterian of Europe.

As already stated, implements of both River-drift and Mousterian technique are found at every height on the desert. With few exceptions these are lustrous (but not glistening), of a deep brown, brown-red or mahogany colour, or of a tinge of

¹ *Op. cit.*, p. 61, Figs. 5, 6 7.

² *Supra*, p. 115, footnote.

orange flecked with black. The few exceptions which are of, or approach, the whitish colour of the specimens from the wady gravels, are simply to be regarded as elements of the great wash-outs which have from time to time scoured the beds of the wadys and valleys. Neglecting these, an attempt must be made to deduce the natural history of the more darkly coloured implements.

So far as I am aware, the patination of Egyptian implements has hitherto only been studied by my friend Mr. C. T. Currelly. A tentative account, too short to be of much value, appeared in the British Association *Reports* for 1908,¹ and, as he informs me, the whole question was to have been dealt with in the Introduction to that volume of the Cairo *Catalogue*, which deals with the stone implements in the Museum. Unfortunately, the volume was allowed to appear without the Introduction, so that for each stone the reader is faced by a number corresponding, as will be explained immediately, to a colour or shade of patination without the slightest indication to what this refers. I am indebted to Mr. Currelly for allowing me to give the following short supplementary account of his investigations. A series of fourteen distinct colours was selected, the deepest being called 1 and the lightest 14. "The sequence was easily seen, and to make sure, I hunted for many doubly patinated pieces, where an implement had been picked up and broken in a later period, and in a few cases an old implement picked up and reworked." The collection, a large one, brought together by Dr. Sturge and Mr. Currelly, "was then arranged in types and examined to see through what patinas the different types ran." It was found "that the forms agreed entirely with the French classification gained from geological position. I have since gone over some thousands of specimens and have not found one that breaks loose from this patina classification." Mr. Currelly then proposes a chemical explanation of patination which approaches closely that set forth on p. 139, and continues: "The flint gradually darkens till it becomes black, but remains rather glossy. It then breaks to a very light ochre, and that ochre becomes redder and redder till it becomes in turn almost black, now with an ochreous, non-glossy, but not powdery texture."

Something has already been said as to the predominant colours of implements from the Egyptian desert, and it has been noted that a certain number of uncoloured or lightly coloured specimens of every type occur (thus the Drift specimen No. 1, is dull white in colour, and another specimen has a matt surface of a deep greyish-black colour), so that it seems certain that Currelly's scheme will not hold without the qualification that it applies only to surface pieces, for it is obvious that an implement which has but recently weathered out of a gravel, and is of a greyish-white colour, might be of a totally different colour if it had weathered out five or seven thousand years ago. Whether his scheme—when the details are published—will prove applicable to the great majority of surface pieces is another

¹ "A Sequence of Egyptian Stone Implements." *Report of the British Association*, 1908 (Section H).

matter; it is, however, probably true to say that most Mousterian pieces have a less archaic-looking surface than have many implements of Drift type. I am not competent to express an opinion as to the validity of his division of hand-axes into seven forms, nor, in the absence of the letterpress of the *Catalogue* has he had an opportunity of defining them. Apart from this refinement it will be seen that, excluding implements of Drift type, which run from 1 to 7, the remainder, with the single exception of "flat discs," occupy almost the whole scale from nearly the darkest to almost the lightest colour.¹

As already stated, implements found *in situ* in gravels have always been of a greyish colour, often irregularly marked, the surface appearing mottled or marbled. Specimens from the wady floor, *i.e.*, which have weathered out of the gravel comparatively recently, may present this colour or may darken to a violet-black colour, but such pieces never present the browns and red-browns with the sub-lustrous or lustrous surface of implements from the plateau or its exposed slopes. These qualities are only found in flints that have lain long in the open, and this immediately suggests that the rays of the sun are at least in part responsible for the condition, the change in the main being effected by light and (or) heat. If the discolouration be in the main due to light, there should be little chemical difference in the constitution of the coloured surface-layers and the main body of the flint; if, on the other hand, the sun's rays have set up a physico-chemical change, then the composition of the coloured skin-layer should be different from that of the white or greyish interior of the flint. This is actually the case: the lustrous surface of the flints clearly indicates a physical change, while analysis shows that a chemical change has also taken place.

I am greatly indebted to Miss Katherine Burke for information concerning the chemical composition of a number of these implements. Examining first specimens from Thebes and Abydos, with typical brown-red surface, she found that the colouring matter is mostly iron, in some specimens manganese is also present in relatively small amount, while there may be an external deposit of carbonate. The next step was to cut out pieces from the centres of two specimens, one from the Eastern Desert with deeply-coloured surface, the other from the floor of the Wadyēn at Thebes, of a whitish-grey colour throughout. The coloured superficial layer of the specimen from the Eastern Desert contained the usual comparatively large amount of iron. Examination of the central portion of the two specimens showed that both contained about the same relatively small amount of iron, and that neither contained manganese. The surface piece contained little carbonate, while the piece from the wady floor contained a relatively large amount.

The oxides of iron and other elements which give rise to the dark-coloured lustrous surface can only be derived from the interior of the flint, more correctly chert, whence they have been carried to its surface by water in the form of soluble salts. Even

¹ Brit. Ass. Report, 1908, *loc. cit.*

allowing for the spongy structure of chert, it does not seem probable that the stone itself contains enough water to carry the amount of mineral substances necessary to form the crust; rather, I think, must occasional showers and dew be considered to play a necessary part in the process.¹ It is not suggested that the amount of moisture deposited on the surface of the stone itself, already somewhat coloured and therefore only partly permeable, is sufficient to dissolve and re-deposit all the mineral matters in the flint, rather should the implement and the ground underneath it be considered to constitute one system. The sun will rapidly dry its surface and the ground around it, but the flint will minimise evaporation from the ground immediately beneath it, and as the fluid it contains is removed from its upper surface by evaporation a certain amount of water from the relatively damp layers beneath it will pass through the cooler lower surface of the stone; this water will diffuse gradually upwards into the substance of the flint, and in time through it, depositing the salts it has taken up on the upper face, and so darkening the colour of the surface deposit. The fact already noted, that in most of the implements under discussion one surface is lighter than the other, and that this is always the lower surface, seems in favour of the view advanced; also that the colour can gradually be seen spreading round the edge of the flint from the upper to the lower surface. That the water concerned in this process is the result of atmospheric precipitation *in situ*, and is not supplied by the constant rising to the surface of capillary water from any great depths, at least in recent times, is, I think, obvious from the following considerations. The Tombs of the Queens are driven into the solid limestone at a height of some 80 metres (262 feet) above local Nile Valley. The desert in this neighbourhood is, or was, so well provided with flint implements that they have been picked up actually above the tombs themselves. The paintings in these tombs are as perfect and probably as bright as on the day they were sealed up, which shows that there was no movement of water laden with salts through the mass of the rock; had such occurred

¹ As to the occurrence of dew in the high desert, the experience of Mr. John Ball, of the Egyptian Survey, who writes as follows, seems conclusive:—"My wanderings in Egypt and Sinai enable me to state that there is no portion of these deserts in which dew-falls do not occur in the winter months. The falls are heaviest and most frequent near the Nile Valley and the sea, and rarer and less heavy in the tracts removed from water, especially on the Libyan plateau. But even in the heart of the Eastern Desert, especially among the mountains, heavy dews occur; I have observed, for instance, a litre per square metre to fall in a single night at Gebel Niqrub, over 200 kilometres from the sea. And my observations in Sinai agree with those made in 1868 and 1869 by Captain Wilson, who records that in 'December and January heavy dews at night are frequent.'"—*The Geography and Geology of West Central Sinai* (Cairo), 1916, pp. 178, 179.

On this matter I may also quote Mr. H. Knox Shaw, of the Ministry of Public Works (Cairo), who has written to me as follows:—"Dew certainly occurs in the high desert, even quite far south and in considerable quantities . . . occasional torrential rains must occur in the desert away from the Nile as well as in the valley itself, being entirely independent of the river valley, but they would be very rare in any particular spot."

there would have been an efflorescence of salts on the tomb walls, and the paintings must have been destroyed.¹

It is to be inferred that the iron deposit on the surface of the flints must have come from the more superficial layers of the soil, and that the soakage from the Nile never reached high enough to be carried to the surface of the plateau; while it seems equally clear that there was never enough surface condensation to penetrate the limestone to the depth at which the tombs were cut.

At this stage it is convenient to refer again to Miss Burke's analyses, the results of which can be presented in tabular form as follows:—

	Surface Piece.	Piece from Wadyēn Thebes.
Colour of surface ..	Dark reddish-brown ..	Greyish.
Colour of interior ..	Greyish-white ..	Greyish-white.
Iron in surface layer ..	Abundant ..	Absent.
Manganese in interior ..	Absent ..	Absent.
Iron in interior ..	Trace ..	Trace.
Carbonate in surface layer	Trace ..	Present in relatively large amount.
Carbonate in interior ..	Trace heavy ..	

It will be seen that the results of analysis are just those demanded by the hypothesis put forward; the relatively large amount of iron in the exposed implements is the result of the repeated evaporation on the surface of the flint of small quantities of water containing iron salts in solution, while the large amount of carbonate in the uncoloured specimen from the wady floor may be considered as the result of absorption of lime from the lime-laden waters. These must have percolated through the gravels for relatively long periods to cement them into the hard calcareous mass they present to-day, or else the carbonate is to be regarded as due to lime in the original chert nodule from which the implement was made. In favour of this latter view is the fact that the centre of a chert nodule removed from the country rock by Mr. Murray (in Sinai) contained a large amount of carbonate.

With regard to the time necessary to produce the palæolithic patina, some indication is afforded by the implements from the Wady Sheikh, the great centre of manufacture of flint implements in protodynastic times (using the term protodynastic in a broad sense), and from a mound not far distant marking the site of the wharf at which the implements were shipped for transport up the Nile. I hope to describe this elsewhere, meanwhile it may be noted that the mound yielded blades and cores of the unaltered milky white colour of the tabular flint (or rather chert) from which

¹ The same argument applies to the Tombs of the Kings; the valley immediately north of the valley of the Tombs of the Kings is 367 feet above Nile level, the nearest point on the plateau above the Valley of the Kings is 706 feet above local Nile level. I am indebted to Dr. Hume for these figures.

the implements were made, while the Wady Sheikh pieces, which had been lying on the surface of the desert for at least some five to seven thousand years, do not present a palæolithic patina, but are often blackish, never, as far as I have observed, showing the characteristic red-brown shades of colour and certainly lacking the typical lustre.

The condition of what is now the high desert, at the time when man was producing implements of the types recovered from the gravels, is a matter of great interest. In this country it has generally been held, at least by archæologists, that the plateau was forest-covered, but Mr. H. J. L. Beadnell, a geologist of much Egyptian experience, has tentatively put forward the opposite view,¹ which is also that taken by Walther,² one of the most recent writers on desert conditions. It is dangerous to draw deductions from negative evidence, and Murray's recent discovery of large numbers of implements at Hammama and other sites in the Eastern Desert indicates that there were sites on which implements were made in large numbers at such distances from the Nile, and, under present conditions, from any water supply, that it must be agreed that the full desert conditions which now prevail did not do so then. It is not necessary to postulate the existence of dense forests—their presence would indeed scarcely have been favourable to palæolithic man—rather may we imagine grassy uplands such as to-day form the indeterminate southern edge of the Eastern Desert, e.g., in the neighbourhood of the boundary between the Sudan and Eritrea, and wide areas of open scrub country such as is to be found bordering the Upper Nile directly the marshy riveraine zone is passed, and also in southern Kordofan.

This, then, was the character in Pleistocene times of what is now the desert plateau. With regard to its incline towards the valley and the greater wadys, it must, I think, be agreed that the main earth-sculpture of its slopes had taken place before Middle Pleistocene times, i.e., allowing for surface denudation, the halfway terrace and the main water-courses existed then in much the same condition as they do now. This seems indicated by the implementiferous gravels, which in certain instances

¹ Mr. Beadnell (*Geological Magazine*, 1903, p. 58) says:—"The presence of worked flints lying scattered around the centres where they were actually worked does not necessarily prove that the plateau was inhabited by man. If early man could obtain better material there than elsewhere . . . he would naturally have manufactured his implements there. Most, or all, these implements are found near the edge of the plateau at no great distance from the valley, and even under the present rigorous desert conditions I have frequently found Fellahin from the valley up to thirty and forty miles inland remaining for days away from the habitable cultivation working small veins of rock-salt or gathering bats' dung in caves. In exactly the same way may early man have gone into the desert to obtain and work his flint . . . If the plateau was really vegetated and habitable, how is it that no traces of man are found at any distance from the Nile Valley? I have crossed the Libyan Desert and traversed a good deal of the Eastern plateau, but never met with any remains of early man or anything to suggest that either plateau might have been habitable, even in very remote periods.

² *Das Gesetz der Wüstenbildung* (Leipzig, 1912), p. 149.

appear to have in part filled in the beds of older water-courses, as well as by the occurrence of the equally deeply patinated implements alike on the plateau and the major and minor terraces.

IV.

The following conclusions seem justified :—

Typological.

(1) Besides the well-known implements of River-drift and Mousterian types, forms transitional to the Capsian and fully Capsian, though relatively few in number, are to be found on the surface of both the Eastern and Western Deserts.

(2) Forms transitional to the Capsian and fully Capsian include end-scrapers, transverse end-scrapers, nose-scrapers, notched end-scrapers, and some tanged points.

(3) The form of tortoise-core commonly found in Egypt is unlike the usual European type, and is often specially worked to form an implement having a heavy triangular or pyramidal point. This tool must have been used with a drawing or dragging motion. The same point, which it is proposed to call a "tortoise point," is sometimes produced apart from tortoise-cores.

(4) A number of rough tanged points (spear or arrow-heads) have been found. Some of these appear to be definitely Mousterian.

(5) No implements of Solutrian or Magdalenian type were found among the large number of specimens collected from the high desert and its terraces.

Stratigraphical.

(6) The great majority of implements of all three types—River-drift, Mousterian, and Capsian—present a characteristic surface, and a series of shades of colour (palæolithic patina), found only in specimens which have long been exposed on the face of the desert.

(7) Implements of a highly developed Mousterian type, which do not present the palæolithic patina, are found *in situ* in undisturbed gravels geologically of Pleistocene age.

(8) Numerous implements of Mousterian type, and a few of River-drift and Capsian types, which do not present the palæolithic patina, but which resemble the specimens found in undisturbed gravels, are to be found at the base of the cliffs bounding the wadys, indicating that they have weathered out relatively recently from the gravels forming these cliffs.

IMPLEMENTS FIGURED ON PAGES 145 TO 153.¹

1. Large hand-axe, white porcellanous surface, Thebes.
2. Hand-axe with borer point, Hammama.
3. Finely worked ovate, Mahamid.
4. Prismatic hand-axe or pick, Sturge Collection.
5. Long and narrow blade (spearhead ?), Thebes.
6. Mousterian point (spearhead ?), Thebes.
7. Mousterian point, Thebes.
8. *Heavy Mousterian point*, Thebes.
9. Mousterian point, Thebes.
10. Mousterian point, Thebes.
11. Mousterian scraper, Thebes.
12. Mousterian side-scraper, Thebes.
13. *Coarse Mousterian scraper*, Thebes.
14. Levallois flake, Sturge Collection.
15. Flake with borer point, Thebes, Sturge Collection.
16. Borer, Thebes.
17. Finely worked scraper.
18. Mousterian point.
19. Heavy side-scraper bearing three notches, Thebes.
20. Notched flake, Thebes.
21. *Notched flake*, Thebes.
22. Typical domed tortoise-core, Sturge Collection.
23. Tortoise-core, Thebes.
24. Crescent, Keneh, Sturge Collection.
25. Crescent (worked flake), Sturge Collection.
26. Tortoise point, Thebes.
27. Tortoise point, Thebes.
28. Tortoise point on roughly bi-lobed pebble.
29. Tortoise point, extremely worn by use, Thebes.
30. Tortoise point, roughly worked on split pebble, Thebes.
31. Mousterian point with short stout tang, Thebes.
32. Tanged point, Sturge Collection, Thebes.
33. Point with beginning of roughly worked tang, Thebes.
34. Point, perhaps showing beginning of tang.
35. Shouldered point, Thebes.
36. Long flake with trimmed edges, worked to point, Thebes.
37. Blade with edge trimming and signs of wear on other edge and distal end, Thebes.
38. Hollow ended end-scraper, Thebes.
39. Transverse end-scraper.
40. *Transverse end-scraper*, Thebes.
41. End-scraper, Thebes.
42. End-scraper, Thebes.
43. End-scraper.
44. Nose end-scraper.
45. Beaked blade.
46. Transverse end-scraper with opposite lateral notches.
47. *Small implement with three notches*, Thebes.
- 48–51. Asymmetrical end borers with trimmed and notched edges; Nos. 48, 50, and 51, from Thebes, No. 49 from Wasif.

¹ All drawings are reproduced $\times \frac{2}{3}$; implements numbered 8, 13, 21, 40, and 47 were found *in situ* in gravel.

Plate I. Fig. 1.—Tortoise-cores from high desert and from cemented gravel.
Fig. 2.—Levallois flakes from high desert and from gravel.

Plate II. Fig. 1.—Supposed method of holding and using tortoise point.
Fig. 2.—Hard cemented gravel forming north bank of Wadyēn at Sheikh Moussa,
+ indicates position in which scraper No. 13 was found.

Plate III. Fig. 1.—Northern affluent passing round north flank of "Pyramid Hill" to fuse with
southern affluent above 'Elwa el Dibban, the smaller mass on left bank in
middle distance of photograph.
Fig. 2.—View higher up the northern affluent.

Plate IV. Fig. 1.—Interbedded conglomerates, marls, and limestones, north bank of northern
affluent.
Fig. 2.—The high terrace.



FIG. 1.



FIG. 2.



FIG. 1.



FIG. 2.



FIG. 1.



FIG. 2.

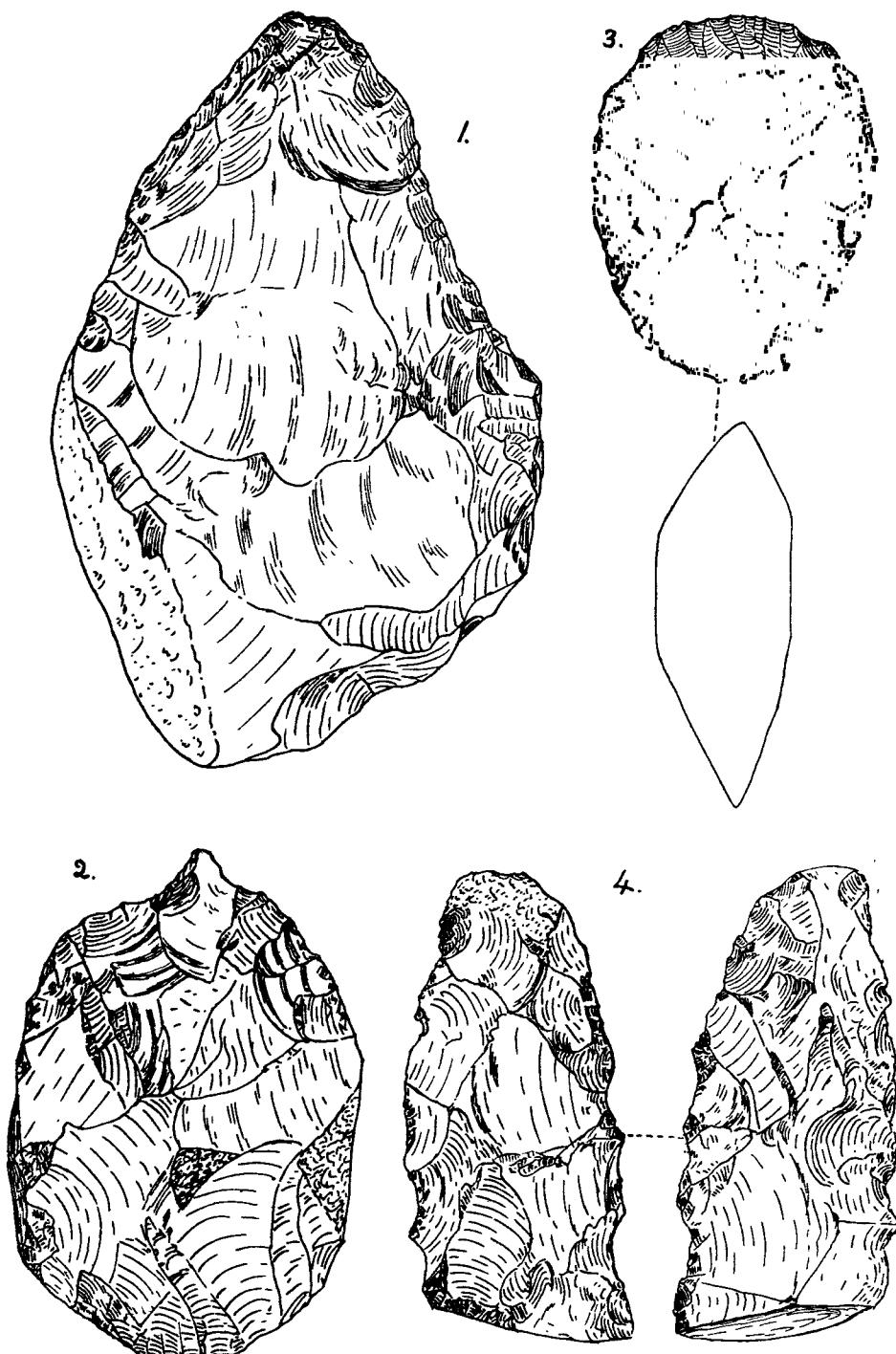


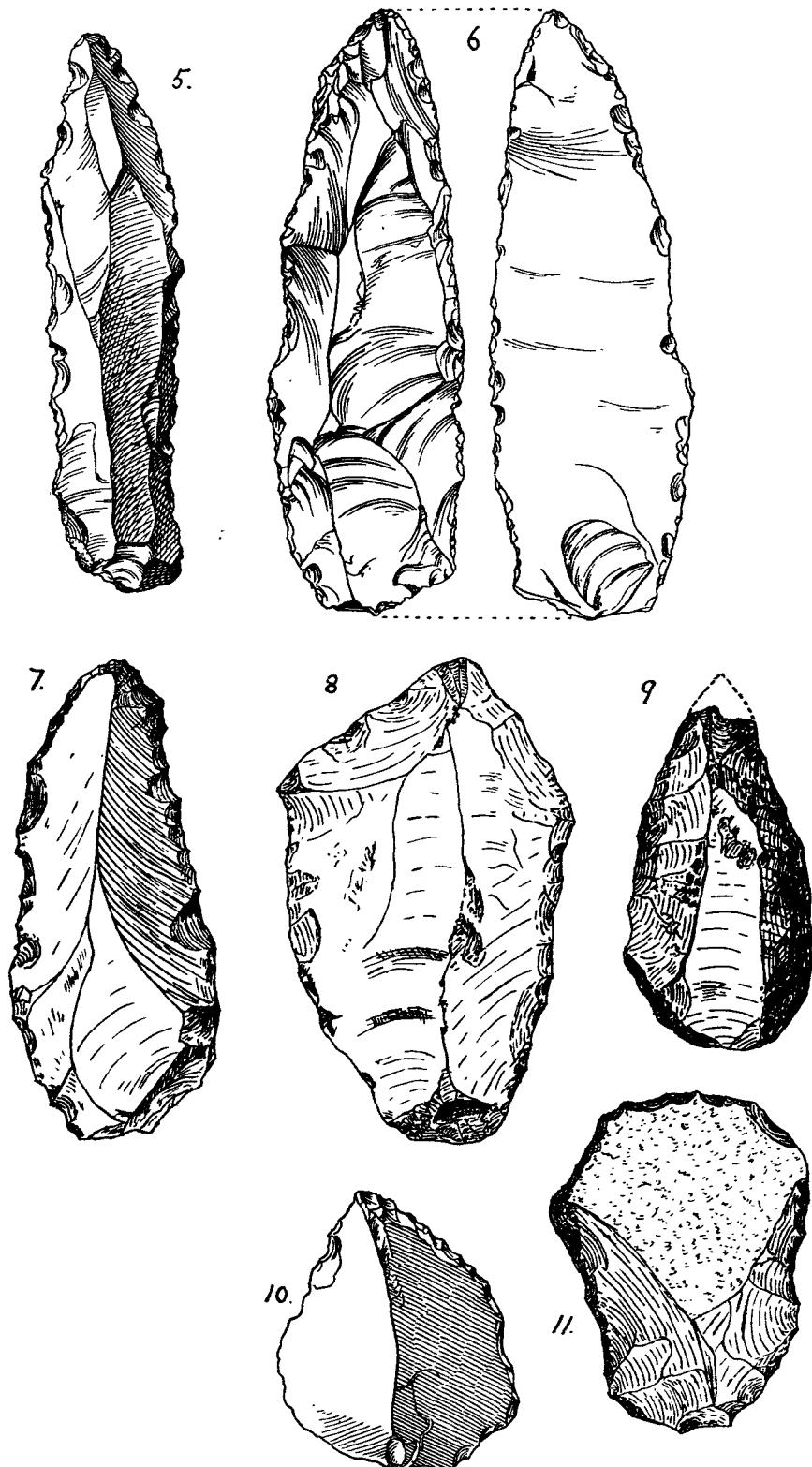
FIG. 1.

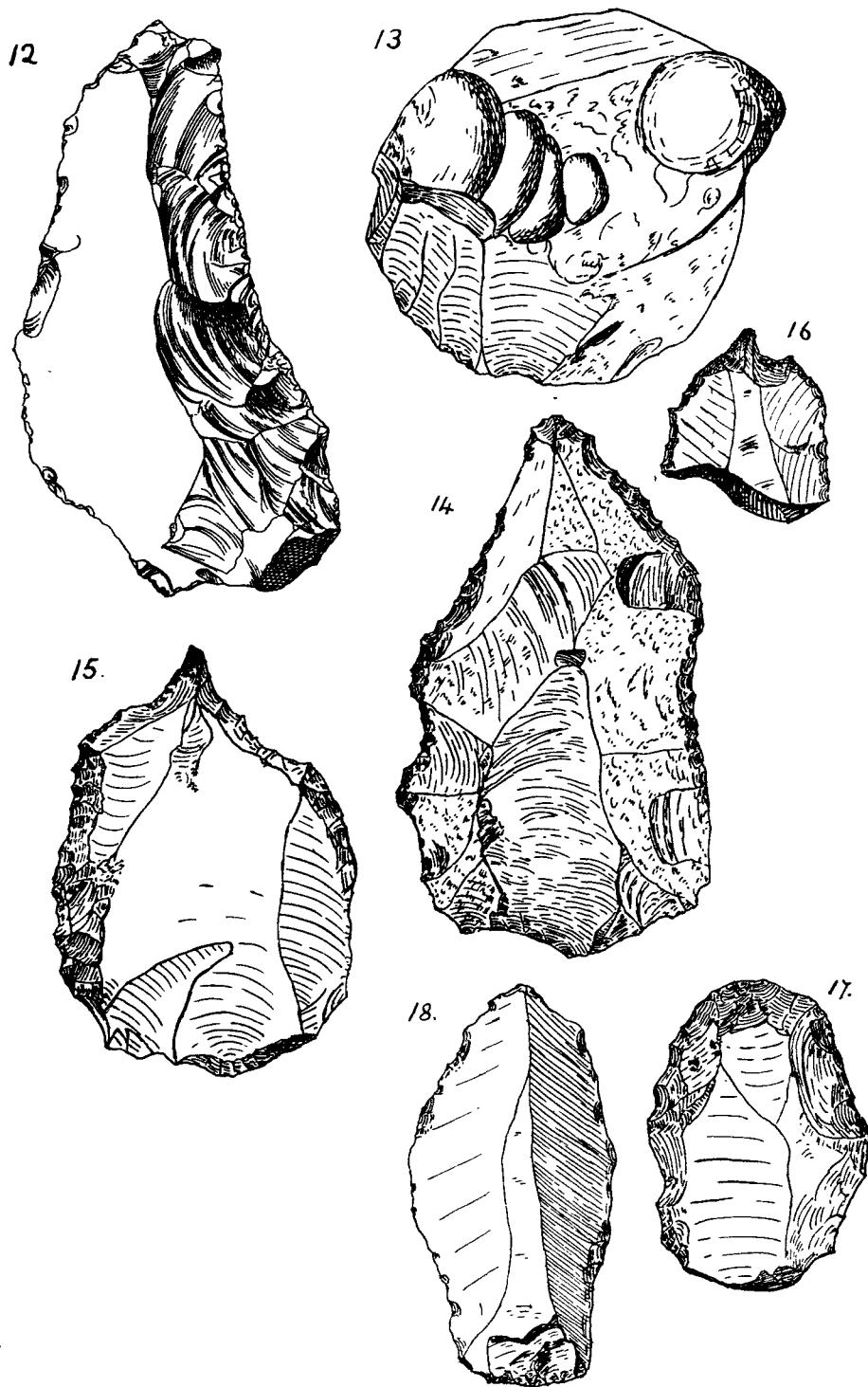


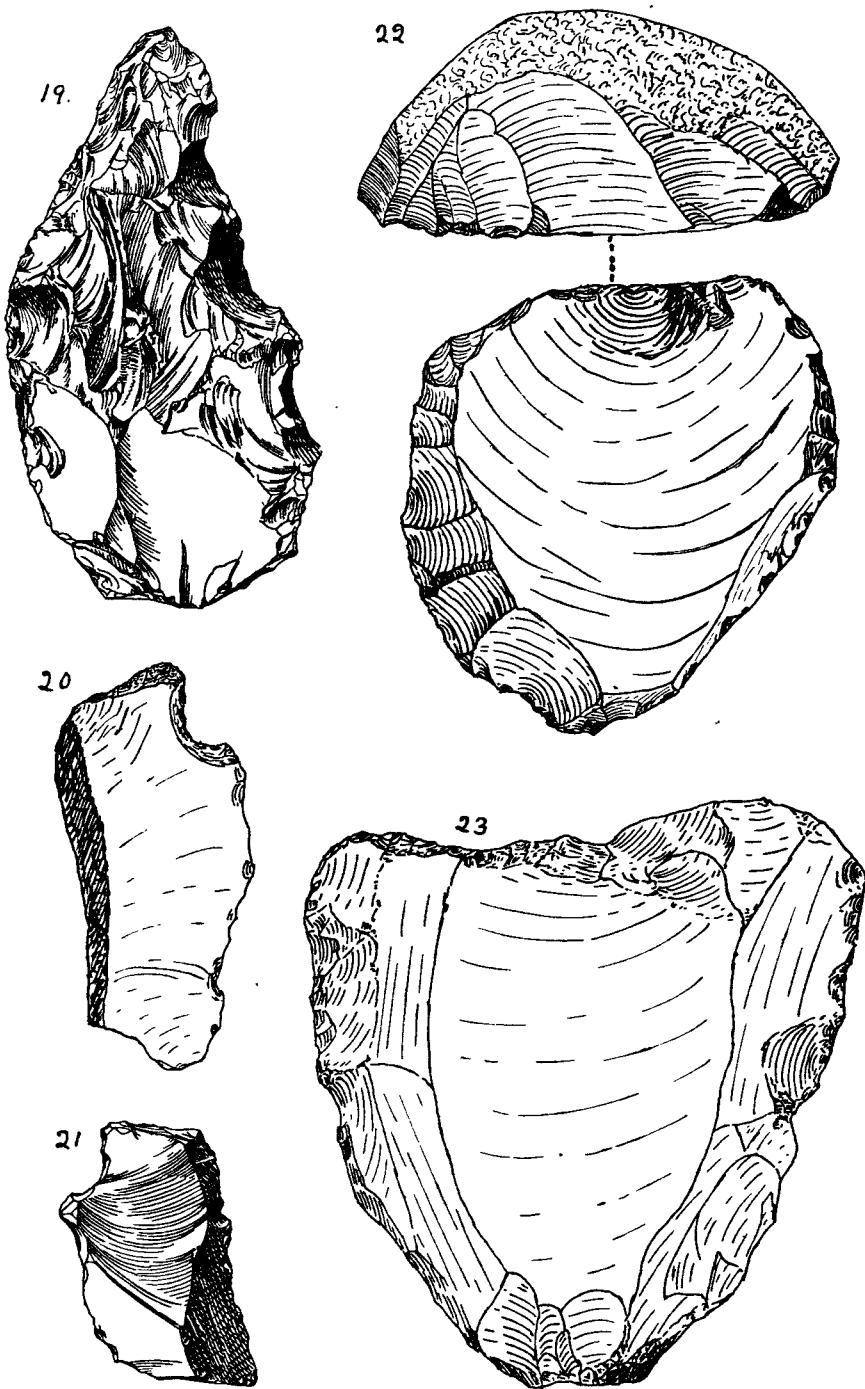
FIG. 2.

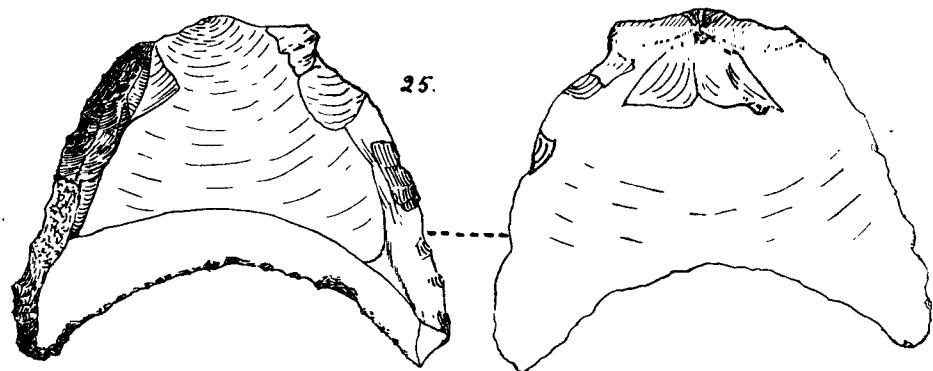
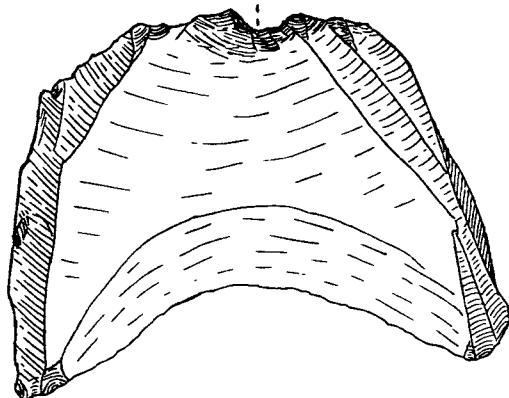
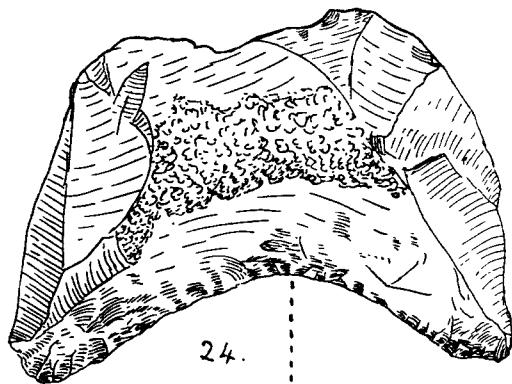


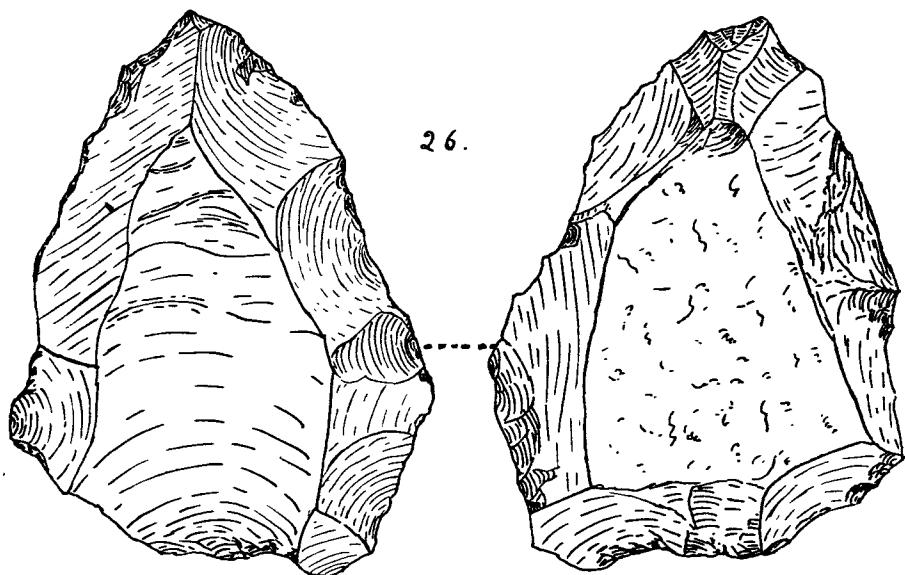




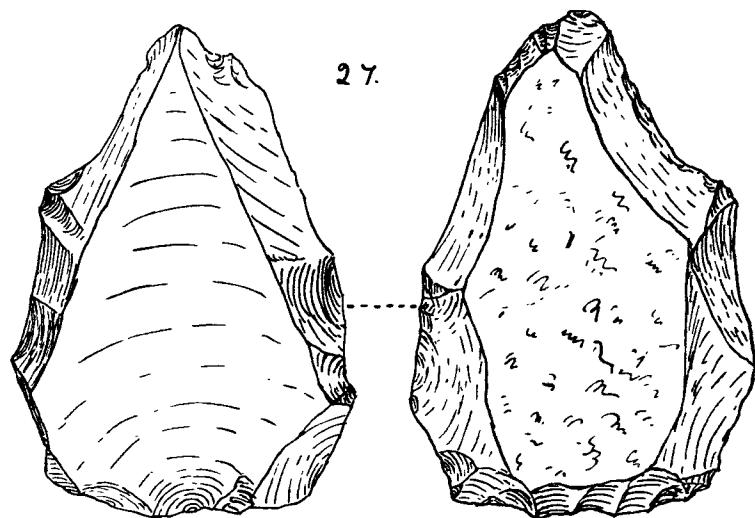




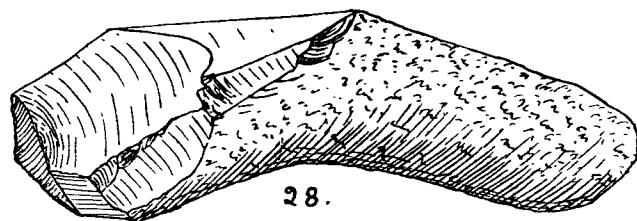




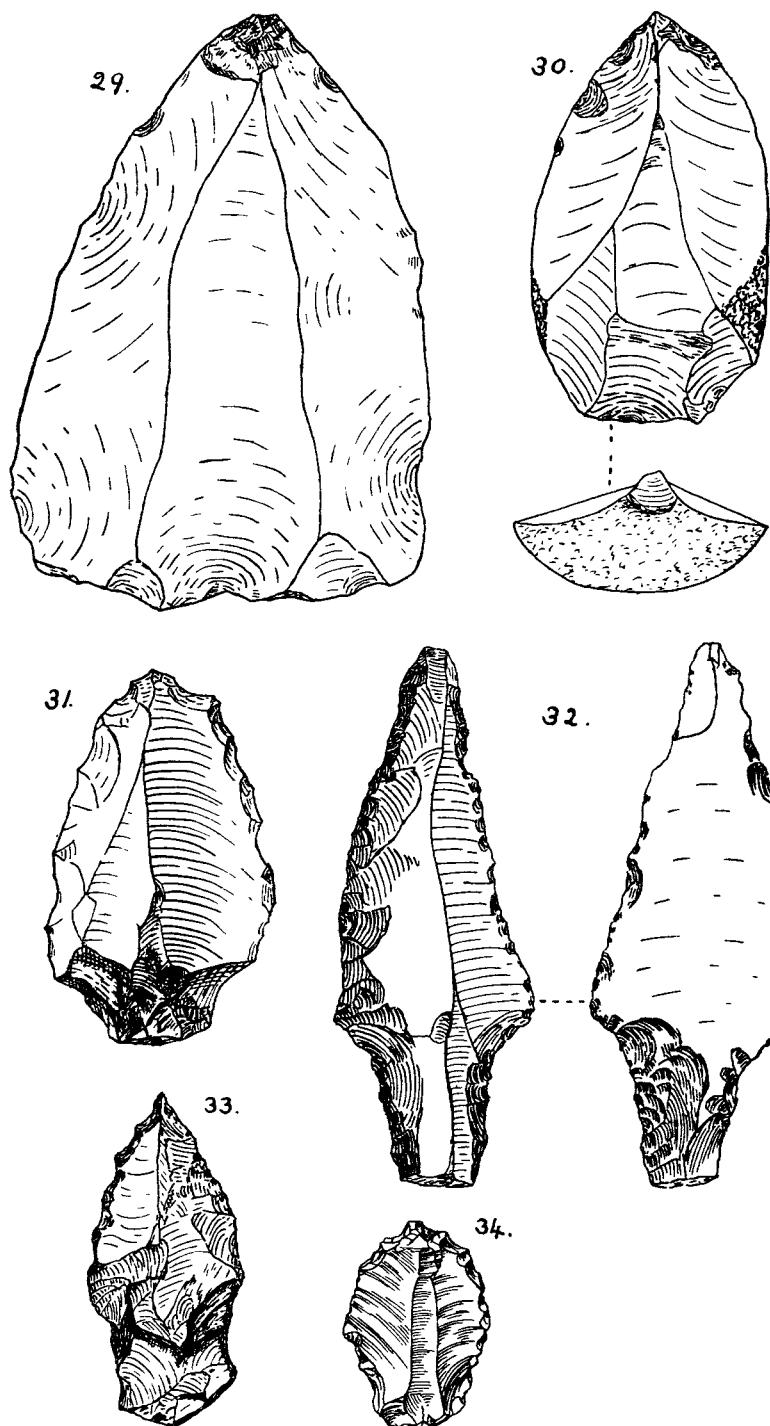
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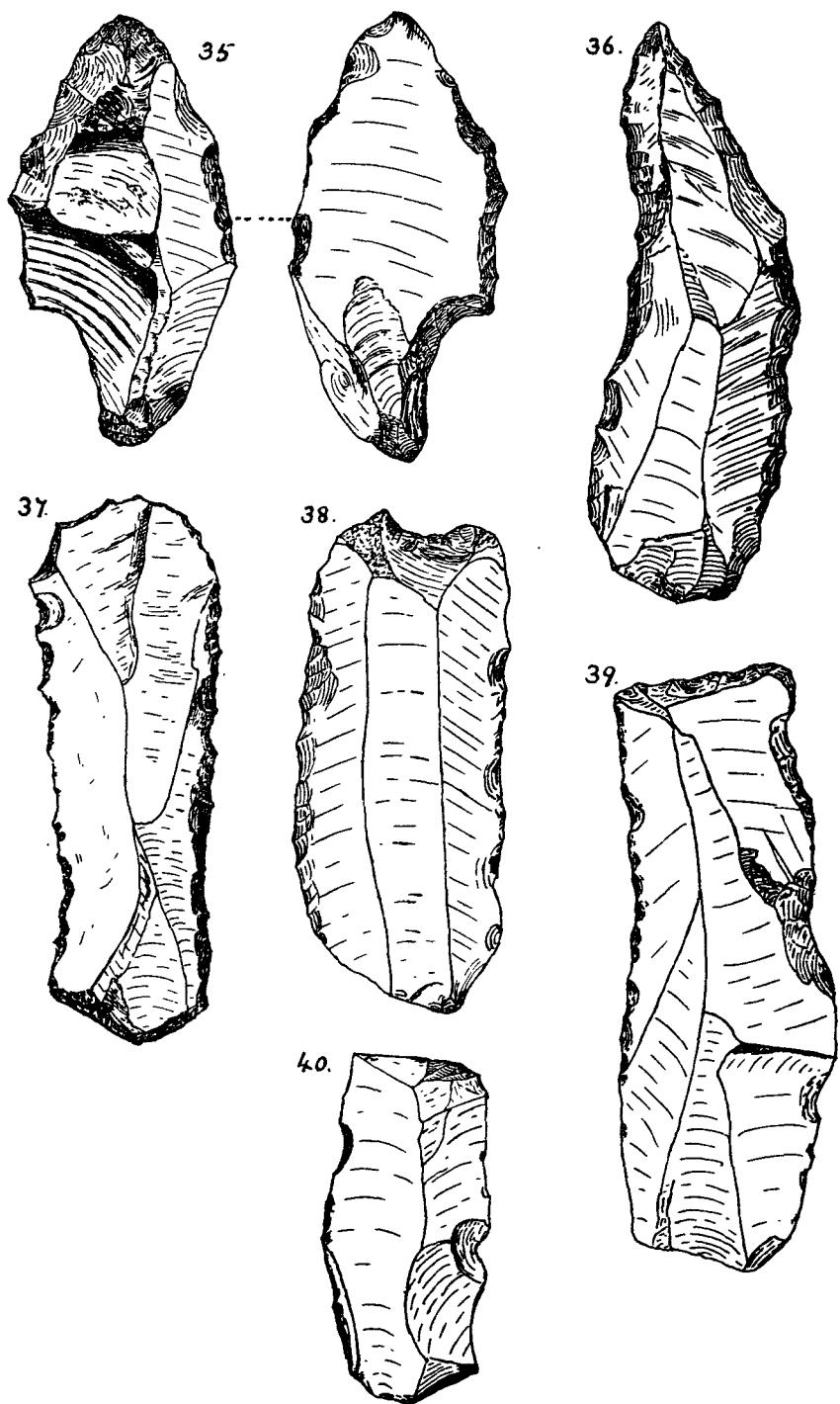


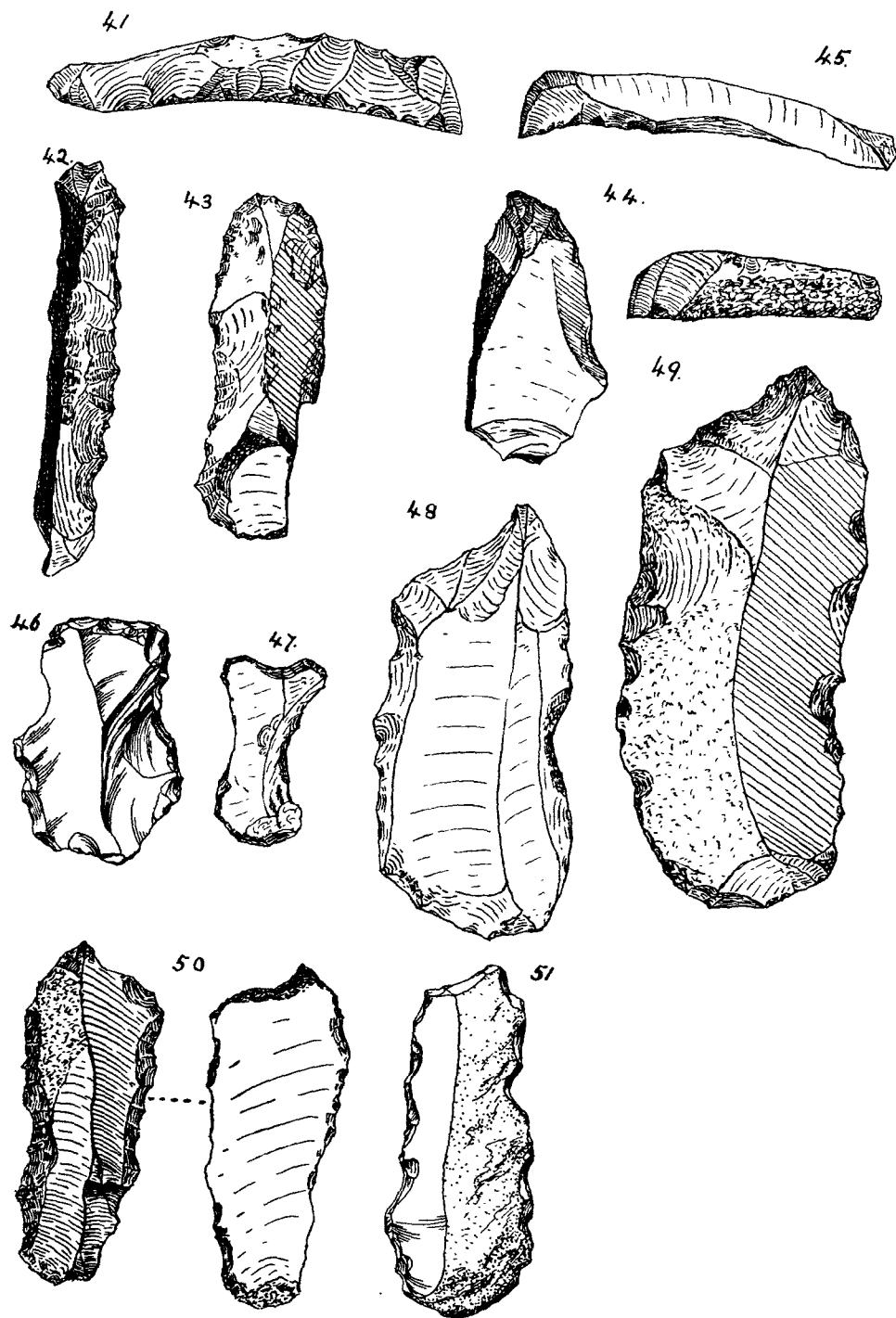
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28.



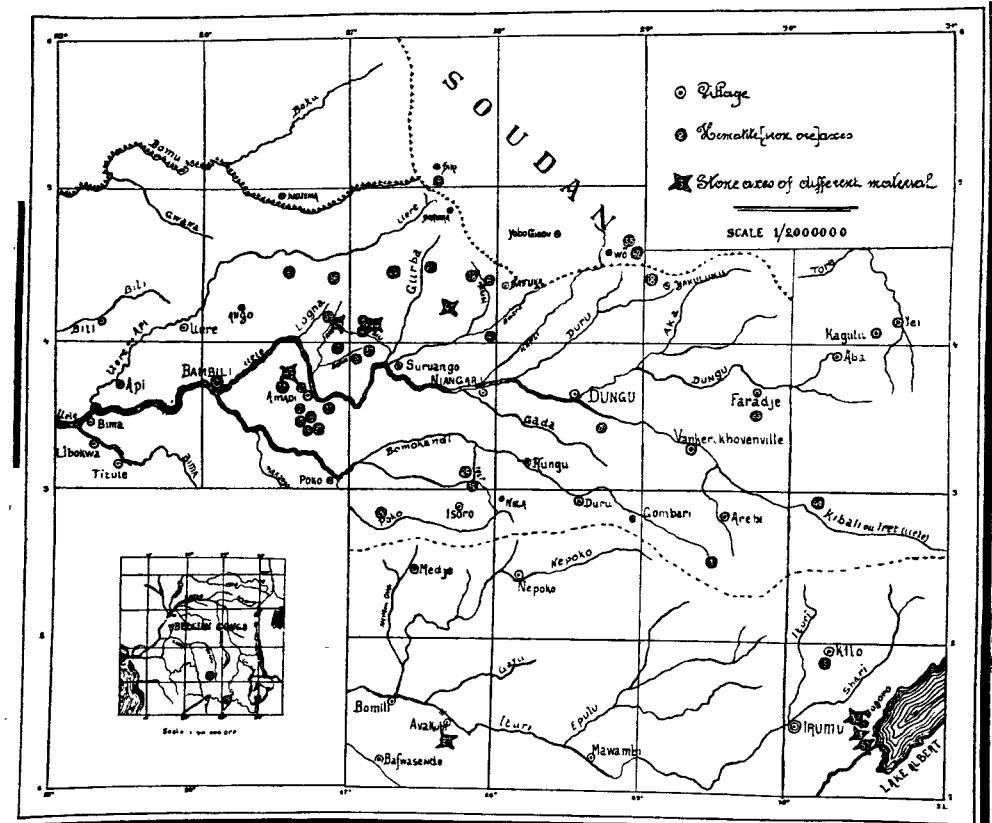




ON A COLLECTION OF NEOLITHIC AXES AND CELTS FROM THE WELLE
BASIN, BELGIAN CONGO.

By R. F. RAKOWSKI.

BEING specially interested in the study of African stone implements, I have during a recent stay at Brussels solicited permission to examine the prehistoric section of the Belgian Colonial Museum at Tervueren. By the great kindness of Baron de Haulleville, the distinguished director of this splendid museum, and of Dr. Maes, chief



of the ethnographical section, well known to the readers of *Man* by his valuable publications in this paper, I not only obtained admission to the separate rooms of the prehistoric collection, but was allowed also to examine the beautiful collection of neolithic stone implements from the Welle. With the authorization of the aforementioned gentlemen I am glad to be able to publish drawings of the most characteristic specimens, with a brief record extracted from the Museum catalogue, and a map,

showing the localities where the specimens have been obtained. These localities are marked with black points containing the ciphers of each specimen corresponding with those in the illustrations. Different marks have been employed for the specimens made of hematite and those made of other material (mostly greenstone).

I am much indebted to Professor Daimeries of the University of Brussels, who most kindly allowed me to photograph three specimens of his own private collection.

On the following list, as far as no other special indication is made, all the localities are to be considered as situated within the Welle Basin :—

<i>Locality.</i>						
1. (37)	Bômakandi	...	...	...	...	No statement.
2. (1251)	No statement whatever.					
3. (1691)	Kilo	...	...	...	...	Obtained from native.
4. (1254)	Sili	...	...	...	”	”
5. (1259)	Dakwa river	...	...	...	”	”
6. (1279)	Mankusa river	...	...	...	”	”
7. (1336)	Between Amadis and Poko			...	No statement.	
8. (1260)	Sili (Neringa)	...	...	...	Found on surface by native.	
9. (1264)	Bomu river	...	...	...	Obtained from native.	
10. (1252)	No statement whatever.					
11. (1272)	Tao river, Mt. Lingua	...	...	...	Found on surface of iron-ore hill by native.	
12. (1335)	Between Amadis and Poko			...	No statement.	
13. (1680)	Bogoro, on Lake Albert (Ituri province)				Found on the surface of a green- stone cliff by white official.	
14. (1292A)	Kabala plain (Mutombo Batubenge, Upper Sankuru)				Found on surface by white official.	
15. (1334)	Between Amadis and Poko			...	No statement.	
16. (1261)	Near Amadis	...	...	...	Obtained from native.	
17. (1333)	Between rivers Roy and Bomu			...	No statement.	
18. (1266)	Solo river, between Wô and Yaku- luku				Obtained from native, who in- herited it from his father.	
19. (1253)	Bekri (“ Les Figuiers ”), Sudan	...			Obtained from native.	
20. (1275)	Road Sili-Doruma	...	...	...	”	”
21. (1271)	Amadis	...	...	...	”	”
22. (1283)	Road Poko-Niapu	...	...	...	”	”
23. (1280)	Faradjé	...	...	...	”	”
24. (1268)	Roy river	...	...	...	Obtained from native, who in- herited it from his father.	
25. (1332)	Between Amadis and Poko			...	No statement.	
26. (1276)	Doruma (Gurba river)	...		...	Obtained from native.	
27. (1682)	Avakubi (Ituri province)	...		...	Found on surface by white official.	
28. (1255)	Between rivers Gada and Kibali	...		...	Obtained from native.	
29. (1281)	Teli (road Rungu-Poko)	...		...	”	”
30. (1681)	Bogoro, on Lake Albert (Ituri province)			...	Found on the surface of a green- stone cliff by white official.	
31. (1262)	Mt. Lingua, Bakéré	...	...	...	Obtained from native.	
32. (1282)	Teli, Bima river	...	...	...	”	”

Locality—continued.

33. (1679) Bogoro, on Lake Albert (Jturi province)	Found on surface of greenstone cliff by white official.
34. (1684) Lubumbashi (Upper Luapula, near Elisabethville, Oriental province)	Found <i>in situ</i> in alluvial drift, 13 ft. below surface, by white engineer.
35. (1267) Wô (Sudan)	Obtained from native.
36. (1277) Gasengwa, between rivers Roy and Uéré	" " "
37. (1258) Between rivers Bomu and Solo ...	Found <i>in situ</i> by native, embedded in the bank of a small tributary of Bomu river.
38. (1278) Mankusa river	Found by native on surface of small hill.
39. (1269) Roy river	Obtained from native.
40. (1263) Kibali ("Iron mountains") ...	" " "
41. (1265) Mt. Manikami (Buié river) ...	" " "
42. (1270) Wô (Sudan), Mt. Pangji ...	Found on surface by native.
43. (1273) Mt. Bangwé, Tao river ...	Found by native in small rivulet, tributary of Tao river.
44. (1256) Sili	Found on the surface by native, in forest between rivers Makonga and Poko.
45. (1274) Mt. Bangwé	Found by native in small rivulet, tributary of Tao river.
46. (1257) Between rivers Bomu and Solo ...	Found together with No. 37.

From the documents shown me by the museum officials it has been possible to establish the fact that only four of the forty-six specimens have been found in the earth, all the others having been collected on the surface. Of these four specimens three happen unluckily to have been found by natives, who discovered them in the beds of small rivers, or embedded in the banks of dry watercourses.

One specimen only has been found *in situ* by a white man, No. 34, from Lubumbashi on the Upper Luapula. It was extracted from alluvial drift 13 feet below the surface.

The material of the greater part of the specimens is hematite iron ore; that of Nos. 43, 44, 45 and probably also of No. 24 greenstone (diabase); that of Nos. 13, 27, 30, 33, a bright greenish rock, much weathered.

The specimens may be divided into seven different categories:—

LONG CELTS OF ROUND SECTION WITH ELLIPSOIDAL EDGE (Fig. 1).

The specimen No. 1 has already been described by Mr. X. Stainier¹; but as it is the most typical representative of this pattern I have given the figure here again, together with that of the four other yet undescribed specimens, merely for comparative purposes. No. 4 is the under half of a similar celt broken off at

¹ X. Stainier, "L'âge de la pierre au Congo," *Ann. Mus. Congo*, 3rd series, Tome 1, Fasc. 1, Plate I, Brussels, 1899.

the base of the shaft. No. 5 is much less regular in shape; the grinding of the surface has been rather superficial, although the cutting edge, worn entirely away, shows that the specimen has been employed for a long time. The most characteristic particular of this series is the different degree in which the surface of edge and hafting end has been worked, the surface of the former having been polished in the most perfect manner, the latter only ground over roughly, just sufficient to give the required shape and a smooth surface. No. 2 has its cutting edge fairly sharp; it bears no traces of use. The edges of Nos. 1 and 3 are slightly worn; those of Nos. 4 and 5 very considerably.

I cannot remember having seen records of this particular type of long stone celts from Central Africa except in the publication of Mr. Stainier.

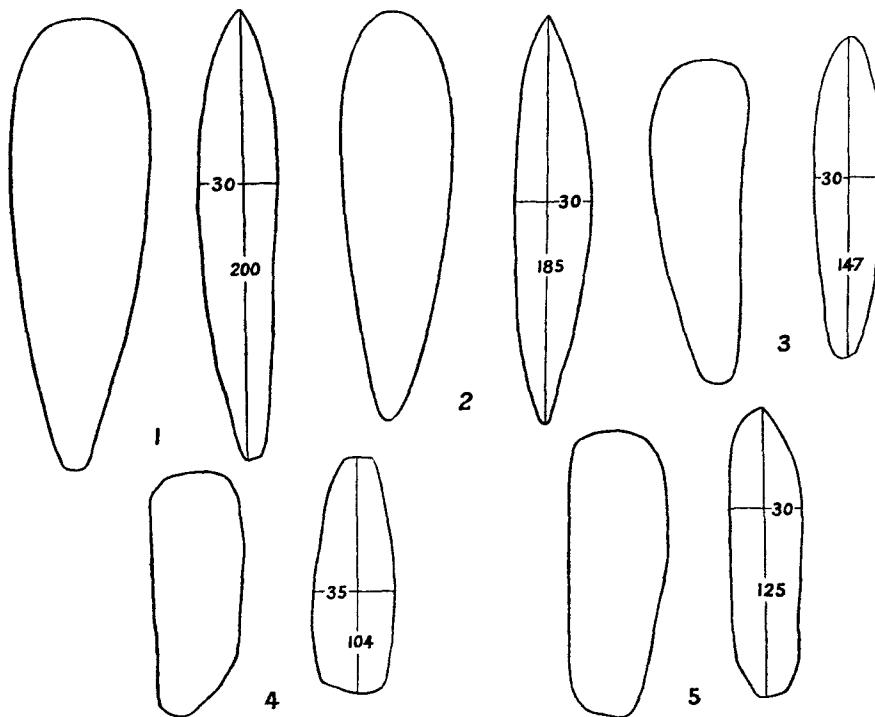


FIG. 1.

BIG PEAR-SHAPED AXES OF FUSIFORM SECTION WITH CIRCULAR EDGE
(Figs. 2 and 2A).

The specimens Nos. 6 to 11, represented in Fig. 2 and No. 1 of Fig. 2A are flat axes with almost circular cutting edges and long pointed shaft. No. 6 (Fig. 2) has a small piece of its butt broken off. The cutting edge of this specimen is perfectly sharp. No. 7 is the butt of a very big specimen of this type, broken off at the base, approximately one-third of its entire length. The cutting edge of No. 8 is slightly worn away. Nos. 9, 10 and 11, notwithstanding their being only half the size of the three others, belong to this type. These three specimens have their cutting edges considerably worn.

The peculiar treatment of fine grinding and polishing of the slopes of the cutting edge, shown so distinctly by the celts of Fig. 1, is visible only in Nos. 8 and 9.

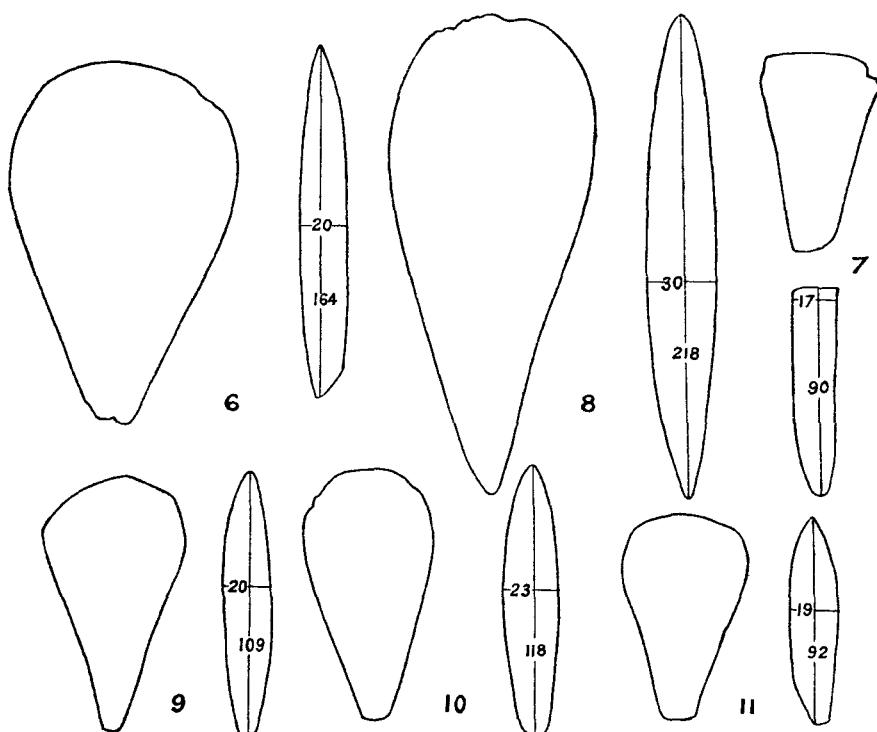


FIG. 2.

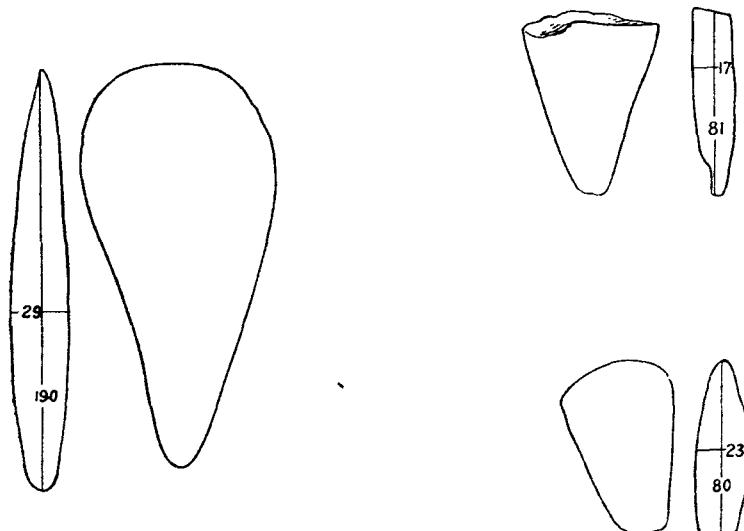


FIG. 2A.

SMALLER AXES, PEAR-SHAPED AND OF ELLIPSOIDAL SECTION WITH CIRCULAR EDGE (Fig. 3).

The specimens Nos. 12–20 are very similar to the big flat axes represented in Fig. 2, as much in their outline as in shape, although less broad and more circular in section. They may be considered as the more practical form of this type, much better adapted to positive working purposes than the big specimens. The series resembles in outline the Fig. 1 of M. A. W. Cardinall's collection of stone implements from Ashanti, described in *Man* in 1917.¹

In No. 17 of this figure the grinding of the surface of the specimen seems not entirely finished, the rougher work of coarsely flaking having merely given the typical outline.

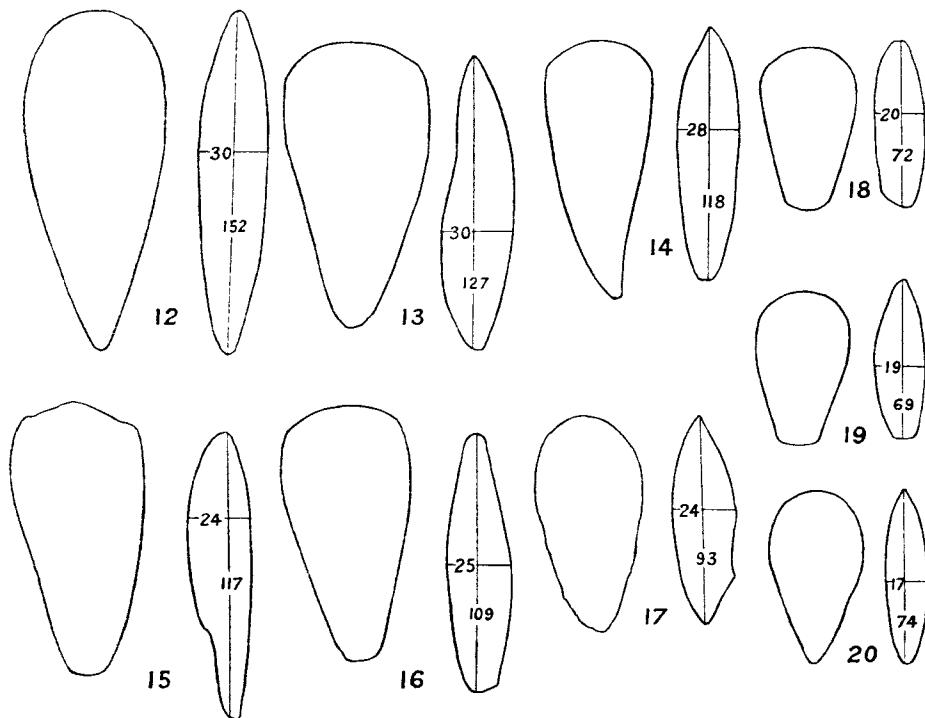


FIG. 3.

AXES AND CHISELS OF TRIANGULAR SHAPE AND ELLIPSOIDAL SECTION WITH NEARLY STRAIGHT CUTTING EDGE (Fig. 4).

These specimens are of a well-known pattern, found practically throughout the whole of Africa. Nos. 23, 24, 27 and 30 have a striking resemblance to the stone implements from Ashanti, described by M. Cardinall in *Man*.² Nos. 21, 22, 26, resemble in shape and section a type of small neolithic axes and chisels I remember having seen in 1911 in the Ethnographical Museum at Berlin, where great numbers of

¹ A. W. Cardinall, "Stone Implements from Ashanti," *Man*, 1917, No. 5 (January).

² *Loc. cit.*

them were shown to me as having been collected in the Cameroons by a German magistrate, who found the first specimens at the bottom of the farm baskets of the natives.

These stone axes, I was told, are considered throughout the whole of the Cameroons as charms, the natives believing in their having fallen from heaven with the lightning. This belief seems thus to have spread very widely.

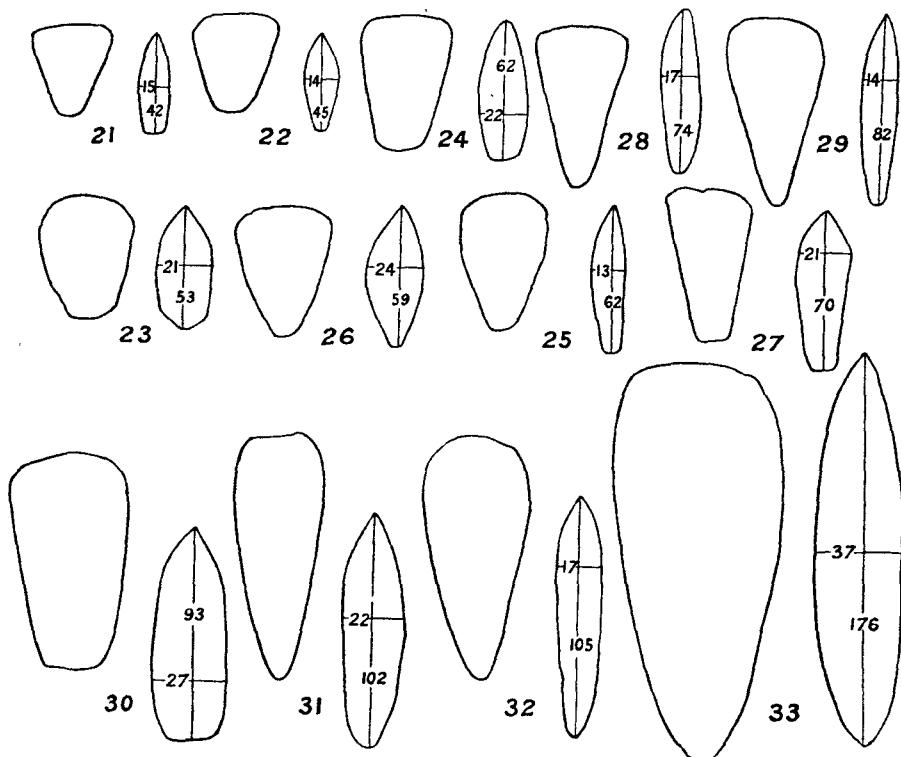


FIG. 4.

ROUGHLY FLAKED AXES, GROUND ONLY ON THE EDGE SLOPES
(Fig. 5 : Nos. 34, 35, 36).

No. 34 was found very far from the Welle basin ; it was dug out near Elisabethville on the southern frontier of the Congo Colony. Its shape is entirely different from the models peculiar to the Welle. It is one of the current models of African neolithic axes. Nos. 35 and 36 from the Welle are rough pieces of hematite, showing well-ground cutting edges, but besides these no traces of grinding.

GREENSTONE AXES OF ELLIPTICAL SECTION (Fig. 6 : Nos. 43, 44, 45).

Nos. 43, 44, and 45 are of a rather celt-like shape, and are made of greenstone (diabase). They differ from all the types represented in Figs. 1 to 5 ; the edges formed by the slopes of the two cutting edges are completely rounded off, giving thus an elliptical section. No. 45 is in fairly good condition, but Nos. 43 and 44 are much

weatherworn. As these three specimens consist of the same material—greenstone—and were picked up on the same locality somewhat outside of the Welle basin (at Bogoro, on Lake Albert), we may consider them as a peculiar type, independent of the Welle forms.

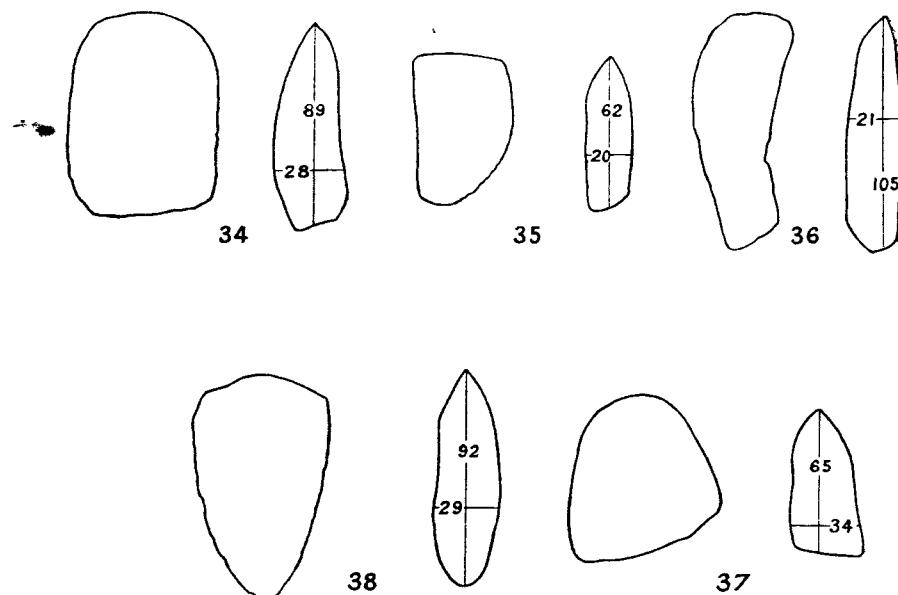


FIG. 5.

HAMMER-SHAPED IMPLEMENTS, PROBABLY WORN-OUT AXES USED LATER AS RUBBING OR GRINDING STONES (Fig. 5, No. 37; and Fig. 6, Nos. 39, 40, 41, 42).

This group consists of implements bearing traces of grinding all over their surfaces, and of battering on the ends. They are rather irregularly shaped, Nos. 39, 40, 41, 42, somewhat hammer-like. No. 37 resembles vaguely the edge end of a broken axe, but as the cutting edges are very ground and dulled it may as well be considered as a grinding implement.¹

The edge of No. 41, a specimen of the general shape of the axes represented in Fig. 3, seems to have been ground off intentionally (the edge is actually 12 mm. thick) as if this specimen had been at last employed for active grinding more than for cutting purposes. The upper end of No. 42 bears marks of battering, and the small holes thus formed are filled with bright red ochre. This suggests that some of the implements of this group, after having served as axes, may have been employed as rubbing stones for the grinding of ochre. Indeed the rubbing of hematite against

¹ Axe-shaped polished stones with edges flattened by battering are known from Mauretania by the publication of Mrs. Crova "L'industrie de l'âge de la pierre en Maurétanie," in the *Revue d'Ethnographie et de Sociologie*, of Paris, 1912, Nos. 9 and 10.

hard sandstone gives as result a reddish powder similar to the vegetal powder known throughout the Congo basin as *ngula*.

Thus the collection of the Congo Museum contains seven distinct groups of neolithic axes and celts :—

- (1) Long celts of round section with ellipsoidal edge.
- (2) Big pear-shaped axes of fusiform section with circular edge.
- (3) Smaller axes, pear-shaped and of ellipsoidal section with circular edge.
- (4) Axes and chisels of triangular shape and ellipsoidal section with nearly rectilinear edge.

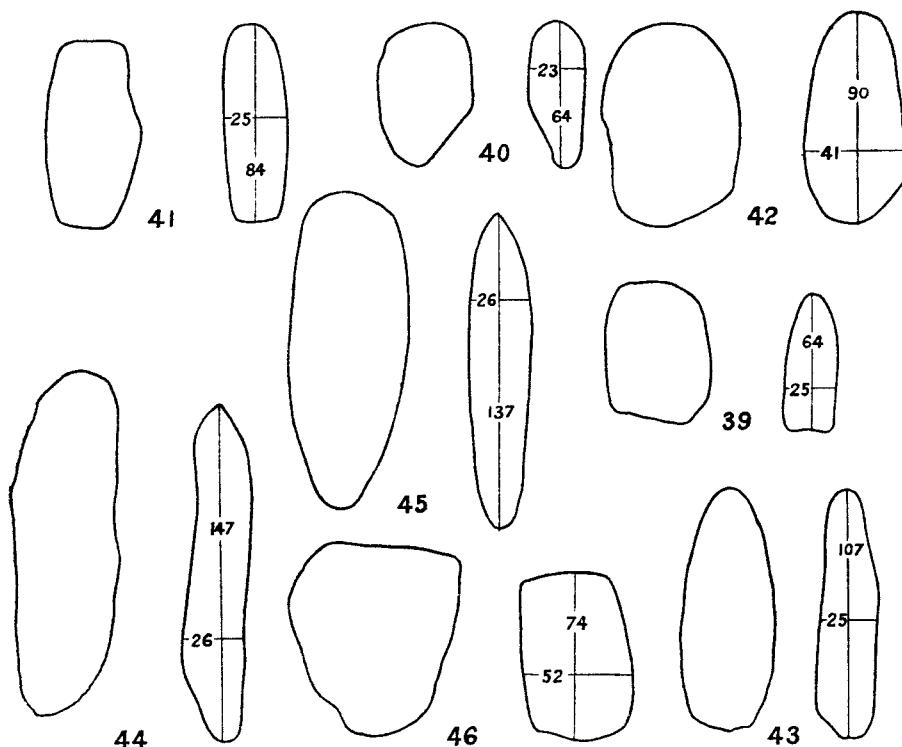


FIG. 6.

- (5) Rough cutting implements of squared section, ground only on the edge-slopes, with rectilinear or slightly curved edge.
- (6) Greenstone axes of elliptical section.
- (7) Hammer-shaped implements, probably worn-out axes used later as pecking and rubbing stones.

CONCLUSIONS.

(a) The types Nos. 1 and 2 are very different from the types of the ordinary neolithic stone axes known from Central Africa. They must be considered as peculiar

to the most developed degree of neolithic civilization of the Welle basin, having been found exclusively in the neighbourhood of this river.

(b) The hematite axes found in the Southern Congo, in the French Sudan, Futa Djallon, and the Ivory Coast are entirely different from the Welle axes, showing the ordinary well-known types of African neolithic axes.

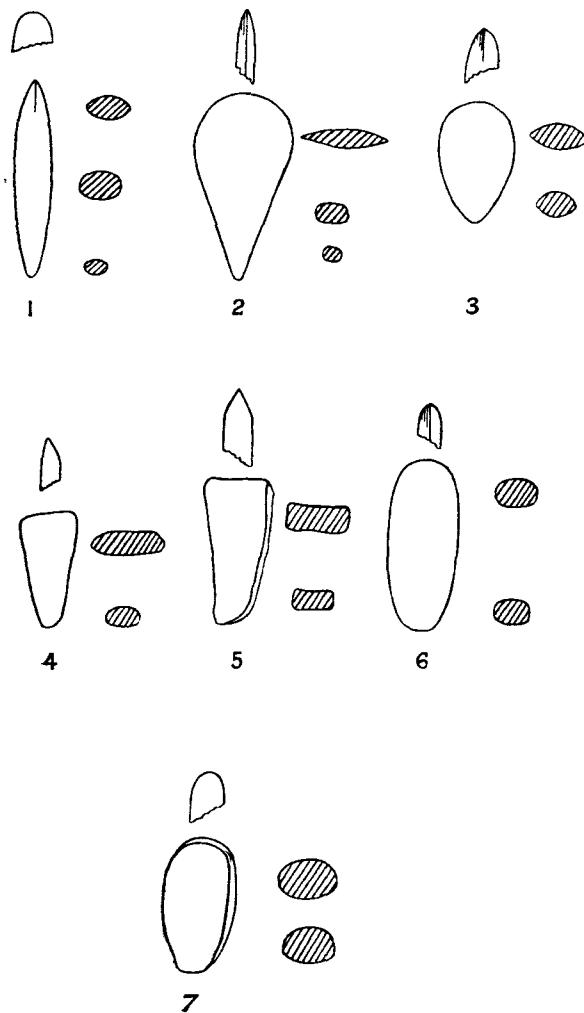


FIG. 7.—SECTIONS OF AXES.

(c) The cutting edges of a great number of the hematite axes from the Welle are surprisingly dull, several nearly 15 mm. thick. These specimens, after having served as axes, must have been employed for scraping or pecking purposes.

(d) The Congo Museum's collection contains a series of rough pieces of hematite with carefully finished cutting edges, but ground exclusively on the edges.

(e) Marks on the cutting edges of practical use by rough working, splitting, cutting, severing, etc., are very rare.

(f) On the contrary, traces of active rubbing and grinding, other than for sharpening the cutting edges, are frequent. Shape, form, and size of some of the implements suggests their having been used as cutting or scraping implements, probably for softening and cleaning hides, bark, etc.

(g) Distinct marks of strong grinding on some pieces of hammer-like shape suggest their having been employed as pecking and rubbing stones, probably for the preparation of ochre (*ngula*).

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Idem.—“Note sur le préhistorique soudanais.” *L'Anthropologie*, 1907.

Mémoires de la Soc. Prehist. franç. Tome 2 : “Haches en Hématite de Pitac” (Fouta Djallon).

The collections of the Soc. Préhist. franç. contain, moreover, hematite axes from the Côte d'Ivoire.

EXCAVATIONS AT THE STONE-AXE FACTORY OF GRAIG-LWYD,
PENMAENMAWR.

By S. HAZZLEDINE WARREN, F.G.S.

[WITH PLATES V—VII.]

INTRODUCTION.

AFTER the reading of the previous paper (*vide Jour. Roy. Anthropol. Inst.*, Vol. xlix, 1919, p. 342) in which the discovery of the Graig-lwyd site, and certain features of the industry found there, are described, a joint committee for its further exploration was appointed by the Royal Anthropological Institute. The following members served upon it :—

- Sir Everard im Thurn, K.C.M.G., C.B. (President R.A.I., 1920).
- E. N. Fallaize, Esq., B.A. (Hon. Secretary R.A.I.).
- H. S. Harrison, Esq., D.Sc.
- Professor A. Keith, LL.D., M.D., F.R.C.S., F.R.S.
- The late A. L. Lewis, Esq., F.C.A.
- Professor W. Wright, M.B., D.Sc., F.R.C.S., F.S.A.
- R. E. Mortimer Wheeler, Esq., D.Sc. (representing the National Museum of Wales).
- H. Harold Hughes, Esq., F.S.A. } Representing the Cambrian Archaeological Association.
Willoughby Gardner, Esq., F.S.A. } gical Association.
- Professor H. J. Fleure, D.Sc. (representing the University College, Aberystwyth).
- R. W. Williamson, Esq., M.Sc. (Treasurer R.A.I.).
- Ivor E. Davies, Esq. (Local Secretary, Penmaenmawr).
- And the Writer as Secretary.

Financial assistance was granted by the National Museum of Wales (£50), the Percy Sladen Memorial Trust (£25), the Cambrian Archaeological Association (£25), the Aberystwyth University College (£10), the Royal Museum, Salford (£2 2s.), and numerous other donors.

Permission to carry on the excavations on the properties concerned was generously granted by Colonel C. H. Darbshire and the Board of the Penmaenmawr and Welsh Granite Co.; Miss Jones of Rhosgoch, Anglesea; the Office of Woods and Forests for the Crown land; and Mr. Jones, the tenant of Graig-lwyd farm.

To each and all of these our best thanks are due, and particularly to Colonel Darbshire, who was good enough to grant us the loan of planks and tools, and

also a place for the temporary storage of the "finds," and to Mr. Davies, the local secretary, who made the necessary arrangements for obtaining labour.

Work was commenced on May 31, 1920, and I was joined a week later by Mr. J. W. Jackson, whose personal work on the site represented the contribution of the Manchester Museum. His experience and enthusiasm were invaluable during the remaining three weeks of the excavations. I had expected assistance during part of the time from several others, but they were unable to come owing to pressure of university work; it would have been easier to have obtained more voluntary work during the vacation. However, the digging was visited on various occasions by Professor O. T. Jones, Mr. Willoughby Gardner, Mr. Harold Hughes, Mr. J. J. Phelps and Mr. Manby Gibson of the Lancashire and Cheshire Antiquarian Society and others.

Work was continually interrupted by the blasting operations of the quarry, which take place about five times a day. The actual amount of the danger is not great, but it is always present, and sheep are occasionally killed by flying splinters of rock. At times, although not very frequently, large stones of considerable weight come across with a very formidable velocity, and our working party had one very narrow escape. I should advise any future diggers on the site to avoid the shelter of the dry stone walls, as these are breached by the heavier projectiles and only make additional missiles. There are numerous hollows in the steep slopes which could be converted into safe dug-outs with comparatively little labour; it would be wise to adopt this course.

Some thirty trial holes were dug in various parts of the mountain side, and scattered axes and flakes encountered in most of them, but the surface suggestions of concentrated chipping floors were not always fulfilled. On such a large area one might very easily miss the best spots by a few yards, and there is a very wide field for future investigation.

We tried one or two trenches, 3 to 4 feet deep, under a rock about 270 yards to the north of the Carneddau cairn, near the word "rock" on the sketch map, as the position appealed to me as a most inviting one for a rock shelter, but with negative results. It is possible that we did not go deep enough, but the digging was peculiarly laborious owing to the size and weight of the scree which had to be moved, and there was nothing to tempt us farther.

The platform to the north-west of the Carneddau cairn, which seemed so promising from the surface indications when I first found it last year, proved disappointing as far as we went. I had four or five men opening up the ground in different places for two or three hours, without encountering anything that seemed worth following up, but I cannot help thinking that there is something of greater interest in this immediate neighbourhood.

It must be remembered that most of our time and energies were fully occupied in working Floor B, and in dealing with the remarkably rich finds encountered upon it.

THE SUPERFICIAL GEOLOGY OF THE SITE.

The material used for the manufacture of the stone axes was the intrusive igneous rock which forms the high crags of Graig-lwyd. But, except on the summit of Graig-lwyd, the axe-working sites are mostly situated on the shales below the dominating crags, as it was naturally the fallen blocks and scree that were used.

The steep north-eastern slopes of Graig-lwyd are covered by surface accumulations of loamy and stony talus, scree, a deposit which I shall allude to as the "clay with shale," and another material locally but incorrectly called "sinter." As would be expected from the conditions of their accumulation, these deposits vary greatly in short distances.

I believe that the "clay with shale" is for the most part formed in place by the subsoil disintegration of the underlying shales. A good deal of the Graig-lwyd rock, fallen from the dominating crags above, is mixed with the "clay with shale" (particularly in the upper part) through the agencies of soil-creep and slipping on the steep slopes.

Axes and flakes have also found their way into the top of the "clay with shale," but I did not succeed in finding any below the first few inches, and I think this deposit may be taken in a general way as the archæological base line.

The loamy talus, on the other hand, is in some cases later than the axe-workings and covers them to a depth of 1 to 2 feet, and it may be more. It differs from the "clay with shale" in the abundance of the Graig-lwyd rock which it contains.

These points are open to future modification, but if correct they are of great practical value in digging trial holes in search of chipping floors, for when the "clay with shale" has been proved there is no purpose in extending the excavation to a greater depth; at least, that has been my experience of digging, confirmed by the examination of numerous ready-made sections. I think it possible that some of my trial holes may have been too shallow, and that I may have mistaken the loamy talus for the true sub-soil "clay with shale," as it was only after digging for some time that I came to draw the distinction between them.

The so-called "sinter" is found in the vicinity of springs; it is a stony clay, which is usually white but occasionally iron-stained. I dug three trial holes into this deposit to a depth of about 3 and 4 feet, but so far as I could see stone axes and flakes occurred only in the disturbed top of this deposit, which appears to be a modification of the "clay with shale" caused by the percolation of mineral water.

The higher north-eastern slopes of Graig-lwyd are entirely covered by the tip of the modern quarry. Below these artificial tips some original (natural) scree is found. On the lower slopes there are only scattered blocks of the Graig-lwyd rock in the surface soil; there is not sufficient to form a continuous bed of scree.

The prehistoric floor usually occurs immediately beneath the turf, but as already indicated it may be covered by a foot or more of talus.

Flakes and axes are also numerous in association with the existent screes, and I have found some extremely weathered examples on platforms of bare rock, where they must have remained for centuries, if not ever since they were made. The greater portion of the scree accumulated during the period which intervened between the departure of the ice of the Glacial Period and the date of the axe-workings. The amount of scree which has fallen from the crags since the latter date is much less in quantity.

Many axes, in every stage of manufacture, have been collected from the surface and built into the dry stone walls.

I had intended to cut some trenches into the peat of the moorland, to see if any horizon of the axe-working period could be traced. This project was abandoned, partly because we had enough to occupy us on Floor B, and partly because I searched fairly extensive ready-made sections in the peat to the west of the word "quarries" on the sketch map without obtaining any useful result. I did not propose to consider the peat, merely as peat, except on the basis of some correlation with the axe-workings, and this correlation I did not succeed in finding.

I found only one or two flakes in the ready-made sections referred to above. These were not found clearly *in situ*, but they appeared to have come from the original surface soil beneath the peat; their weathering also agreed with the condition of other stones of the Graig-lwyd rock found in that position.

At the point "C" on the sketch map there is a group of bays cut into the hillside, like small roadside quarries. One felt that these might possibly be prehistoric workings. There is certainly a chipping site here, and I found several axes, and two halves that made a "re-fit," but had not time to investigate it adequately.

In tracing the prehistoric floor through the main excavation of Floor B and through the minor trial holes, and various ready-made sections in different parts of the area, all the evidence that I could gather pointed to one geological horizon only for the industry, although it may very probably have extended over more than one of the minor archaeological culture stages.

THE AREA OF THE WORKING SITES.

I had not sufficient spare time in which to search the surrounding country, and there is little of importance to add to the points noted in the previous paper. In general terms, the working sites extend from Graig-lwyd farm (see sketch map), up over the northern and north-eastern slopes of Graig-lwyd, and over its summit where there is evidence of considerable working, thence down again to Carneddau and under Clip-yr-Orsedd, while from this point I traced scattered flakes to the Dinas and Carreg Fawr; but all this part still remains very inadequately searched.

There is an outlying site near the top of the Green Gorge, and I also found a few flakes in felsitic ash (not the Graig-lwyd rock), on the moors to the north of Tal-y-fan, and also to the west of Foel-lwyd.

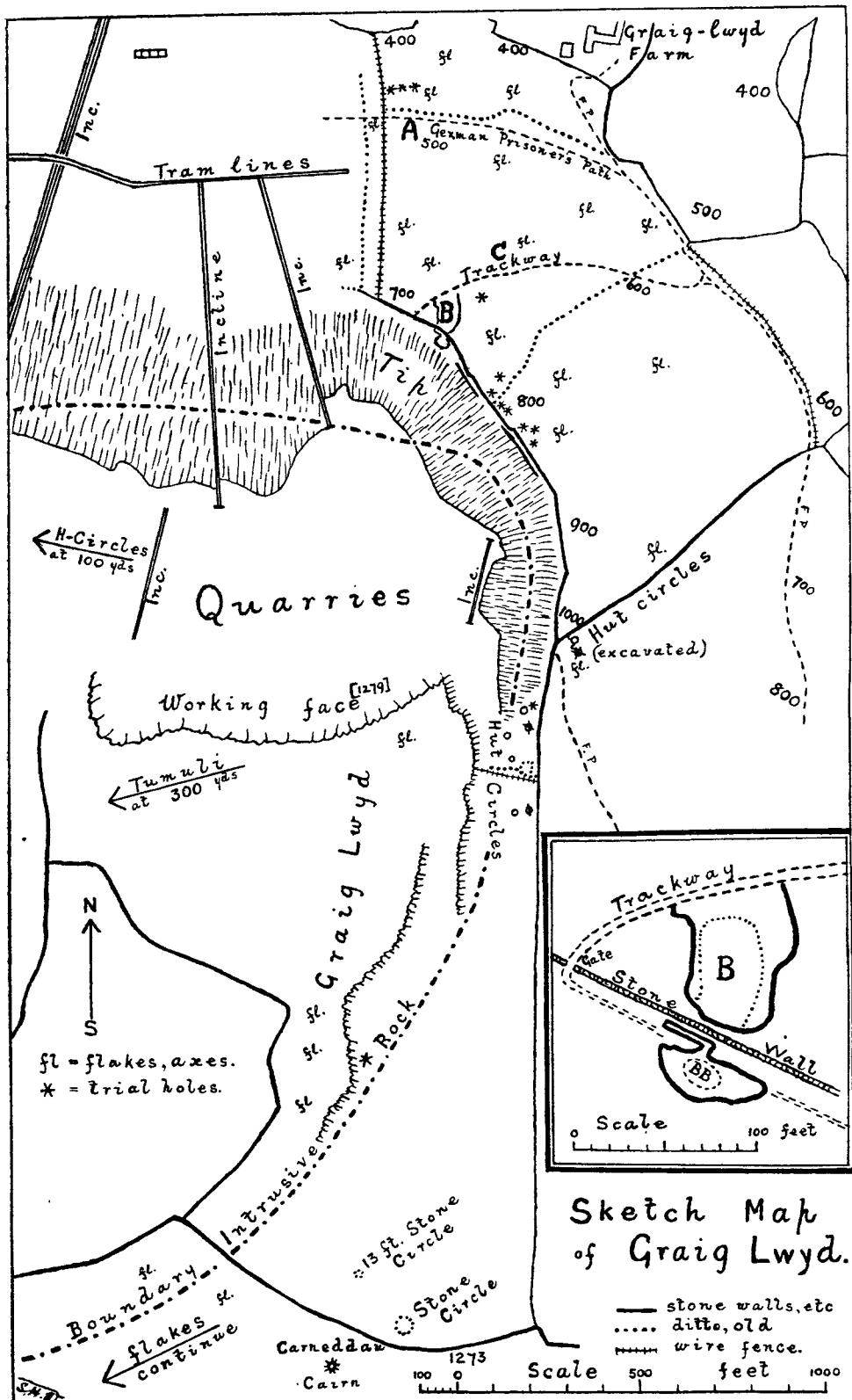


FIG. 1.—SKETCH MAP OF GRAIG-LWYD, PENMAENMAWR.

The Green Gorge flakes have not been sectioned, but they are not normal for Graig-lwyd ; perhaps they are the Clip-yr-Orsedd variety, which is slightly different.

FLOOR B.

The previous year I had been most successful in digging at two spots which I called Floor A on the German prisoners' path and Floor B on the upper trackway. The latter developed into a more important site than was suggested by the surface indications, as the best of it was covered by a foot or more of comparatively unproductive talus below the turf.

The site of Floor B was situated on the slopes of Graig-lwyd at nearly 750 feet O.D., just at the foot of the scree below the original position (now modified by the quarry) of the crag itself.

Work was commenced south of the stone wall (see sketch map, and inset plan where the excavated area is within the thick black lines on either side of the wall), and a considerable area turned over to a depth of 2 to 3 feet, until the bed of "clay with shale" was encountered, although the digging in the heavy scree was very arduous and slow. Shortly afterwards another spot was opened from the edge of the trackway leading from the quarry gate, and the floor of flakes gradually followed up-hill towards the boundary wall of the quarry company's property. A considerable block of the best part of the floor was left untouched beneath, and on either side of, this boundary wall of dry stones.

At BB the site of a large hearth was encountered on the horizon of the floor, associated with much charcoal which was very decayed and small. This hearth was about 15 by 20 feet in diameter, or rather more, and was formed of selected cubical blocks of stone of from 3 to 5 inches in diameter, which although a good deal broken up appeared to have been originally placed together to form a floor. The most careful and thorough search failed to trace anything of interest beneath it. But the enormous accumulation of flakes and imperfect axes on the down-hill slope below this hearth had obviously been made in direct association with it.¹ Professor O. T. Jones suggested that the workers might have heated the stone in order to facilitate the flaking, but such heating would certainly have to be restricted to a very moderate degree as serious firing completely destroys the virtue of the stone. Numerous waste flakes and imperfect axes were thus calcined in the fire. The sites of two or three small fires about 3 feet in diameter were found in the floor lower down the slope. These small hearths were associated with accumulations of minute splinters, where the finest work was carried on.

The diagram, Fig. 2, will make the relation of the deposits clear. H is the surface humus and turf ; T, the loamy talus ; S, the scree both underlying and overlying

¹ The lower boundary of the great thickness of flakes, etc., is indicated on the inset plan by the dotted lines.

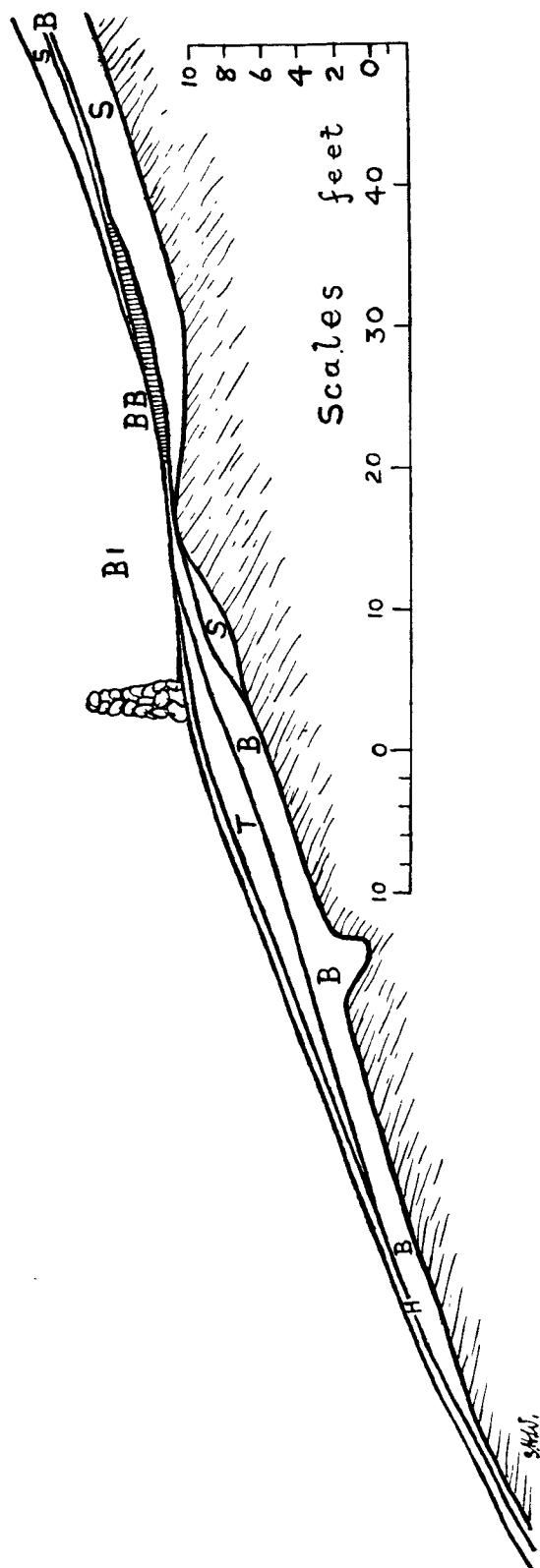


FIG. 2.—DIAGRAMMATIC SECTION OF FLOOR B.

the line of the floor ; B is the floor itself ; and BB the large hearth, while underlying the whole is the "clay with shale." The downward loop in Floor B, where it is seen in the section to descend more deeply into the "clay with shale," was due to land sliding on the steep slope, and showed disturbance.

77. This is the most interesting among the "re-fits," to which reference will be made in the next section. Both the broken halves were found near BB, within a few feet of each other ; the butt end at the deepest part of the floor, about three feet from the surface, while the useful part of the blade occurred upon the present surface. The butt is comparatively fresh and unweathered, the functional end is greatly patinated and old-looking. The intended blade was broken by hinge-fracture during the process of manufacture, and the functional part finished off to a smaller size, as some of the flakings are struck from the hinge-fractured surface. It was almost

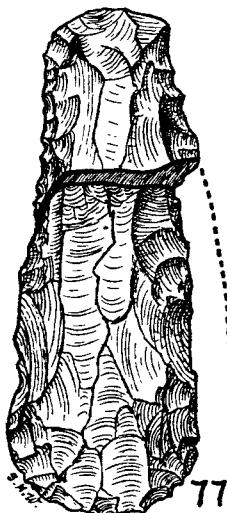


FIG. 3.—"RE-FITTED" AXE. SCALE $\frac{1}{3}$.

certainly used on the site by the axe-makers, but not considered good enough to be taken away. It is also worthy of note that the originally intended axe is the thin-butted form, but the useful blade as finished is blunt-butted, being truncated by the accidental hinge-fracture. This shows that special forms are occasionally due to accident. 194 × 75 × 52 mm. [Cardiff.]

THE STONE AXES AND OTHER IMPLEMENTS.

With the exception of No. 123, every specimen which will be referred to, or included in the numbers of the various groups, was found on Floor B. This was undoubtedly, as a whole, the accumulation of one date, but one must never lose sight of the instability of the scree material on a steep slope, and the impossibility of eliminating chances of admixture. The conditions destroy the value of

stratigraphical evidence, as the specimens found in the upper part of the deposit have many of them rolled down the slope from higher levels, and their position affords no evidence of relative date. The evidence of 77 has already been noted.

More than four hundred half axes, or "ends of celts" as they are more usually called, were found, and more than sixty of these have been re-fitted into whole axes. This seems a sufficient proportion to place the real character of the "end of celt" beyond further dispute. As at Grimes Graves, Cissbury, and other working sites, many of these breakages are of the "hinge" order, but others are oblique or irregular.

It is rather difficult to give a complete total of the finds, as so much of the ruder material was left rejected on the site, but some 1,100 specimens were selected for preservation, without counting any flakes; the great majority belong, in a broad sense, to the axe and adze group.

INDEX TO DIAGRAMMATIC REPRESENTATION OF SPECIAL CHARACTERS OF THE IMPLEMENTS.

A (and B in the cross-sections), represent old joint-plane surfaces, weathered before flaking. C (and D in the cross-sections), natural joint-plane surfaces separated during the flaking. E (and F in the cross-sections) are uncertain cases, either A or C. G, primary flake surfaces in the cross-sections. In the face views the primary flake faces, in the case of axes made from flakes, are left unshaded. H, polishing, longer lines being used in 124-127 to indicate the direction of the *striæ*. Stars indicate pecking or battering. In the side views of the flake adzes, etc., the primary flake surfaces are left unshaded, while in certain cases F is placed beside the bulb of percussion.

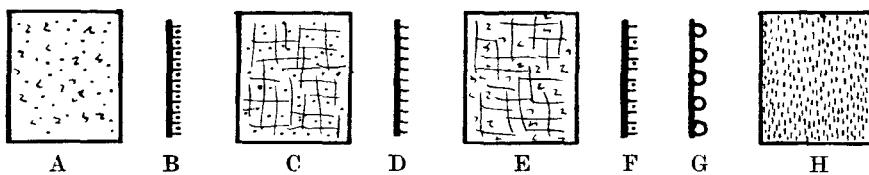


FIG. 4.—DIAGRAMMATIC REPRESENTATION OF SPECIAL CHARACTERS OF THE IMPLEMENTS.

THE RANGE OF FORM OF THE GRAIG-LWYD AXES.

The arrows in the diagram indicate the manner in which the various forms grade into each other, but are not intended to suggest any theory of their actual evolution. The specimens, distributed to various museums, are marked in white paint with the following system of lettering (to indicate the classification of form) either singly

or in various combinations, while a small letter in place of a capital indicates a less pronounced development of the same feature :—

- Pre.* Preliminary stage, frequently pointed.
- A.* Intermediate ovate.
- P.* Pointed.
- O.* St. Acheul-like form of ovate.
- X.* Primitive axe-edged tool for grasping in the hand. Indicated in the diagram to suggest its influence, but scarcely occurs at all at Graig-lwyd.
- D.* Double-ended.
- C.* Flat-faced (= “ flat-based ” of Mr. H. Dewey).
- T.* Thin-butted.
- L.* Elongated. *LL*, very elongated, chisel-like.
- N.* Expanded edge.
- B.* Broad in its proportions.
- Z.* Adze.
- S.* Side-chopper.
- F.* Made from a flake.
- G.* *Grattoir* and end-scraper, and its similarity.
- R.* *Racloir*, or side-scraper, similarity.

In numbering the figured specimens, it seemed to me better to continue straight on from those previously illustrated so that the numbers of the figured specimens would not be duplicated. I hope that this practice may be continued in the future.

Methods of Flaking.—The most important point to be observed is the abundance of pseudo-Levallois flakes with faceted butts. These thinning flakes were dealt with in the previous paper, but for the sake of completeness in the present report the accompanying block is here reproduced as Fig. 6.

69 is a lateral or transverse thinning flake [Some of the duplicate specimens sent to museums are marked in white paint *Tif*] struck across the blade of the axe-in-the-making. It is shown in three positions : face view, cross-section, and with the faceted butt on twice the scale. [British Museum.]

70 is a longitudinal thinning flake [*Ltf*] struck lengthways down the blade. 71 is another similar example of accidentally spear-like form. 72 is a longitudinal section of yet another, showing the thickness removed from the centre of the blade. The cross-section of 57 shows a bad case of excessive thickness on one face, which might have been reduced, firstly by a longitudinal thinning flake, suggested by the upper broken line ; and secondly, a further reduction of thickness could have been obtained by a transverse thinning flake, *x y*. [70 and 71, British Museum.]

78. Plunging-flake-axe. This specimen gives critical evidence of much value on the above points. The blow fell too far from the edge, and at a hollow instead of at

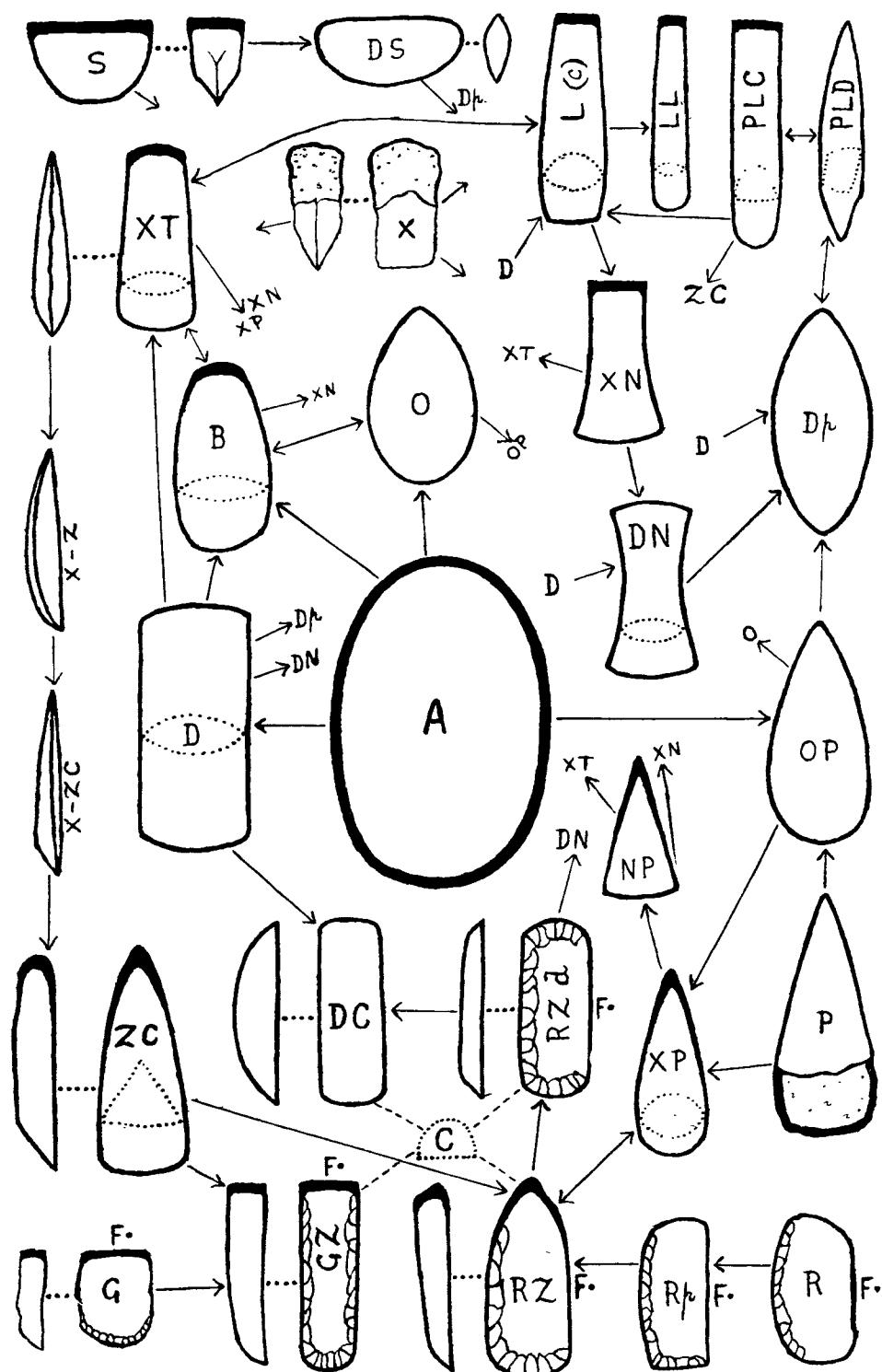


FIG. 5.—THE RANGE OF FORM OF THE GRAIG-LWYD AXES.

an excrescence, the position of the bulb of percussion being indicated by an arrow in the side view. The blow should have fallen near the dot within a circle, and thus have removed a flake from the right-hand side as suggested by the dotted lines. As it was, the fracture plunged backwards through the thickness of the axe, and ruined the intended blade. This specimen also demonstrates the true meaning of the facetting of the butt (as shown in Fig. 6, Nos. 69 to 72), which is in this case the shaded portion of the face view. 173 × 84 × 37 mm. [British Museum.]

Ordinary plunging flakes are of fairly frequent occurrence; one large example, among others, has been sent to Oxford.

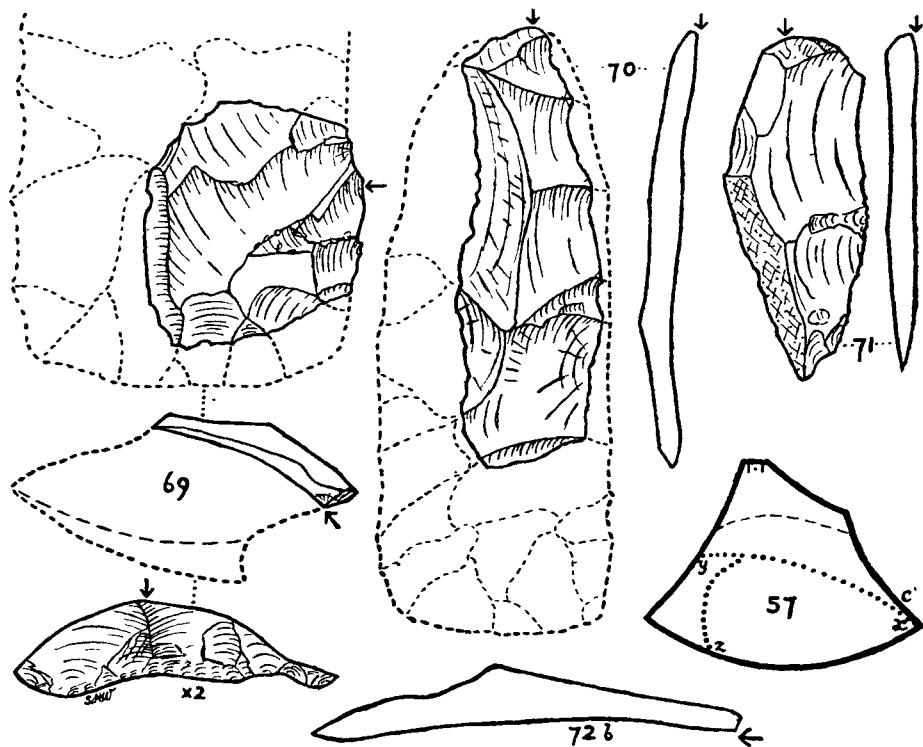


FIG. 6.—THINNING FLAKES. SCALE $\frac{1}{3}$.

The facetting of the butt (the fractional remnant of the edge of the axe) is also seen on the minute finishing splinters, as well as on the larger pseudo-Levallois flakes. All these features are the inevitable waste product of the flaking of the axe.

Pre., A, P, O.—The preliminary stages in flaking an axe from tabular and other forms of scree were dealt with in the previous paper, and there is little to add or modify from the results of the 1920 digging. In the previous paper I also referred to axes made from large flakes, but did not then fully realize how important this technique was in the Graig-lwyd industry. The workers on this site used either natural pieces of stone or large flakes indifferently, to produce the same form of

finished implement. The striking of these large primary flakes, weighing from seven to fourteen and sometimes even twenty pounds, is somewhat of a mystery. The rock is very tough.

Even if the hammer-stones were mounted in long wooden handles one would have expected them to be shattered before these huge flakes would be removed from the large blocks of scree. I tried hurling the large blocks against each other, and only succeeded in getting very hot and tired !

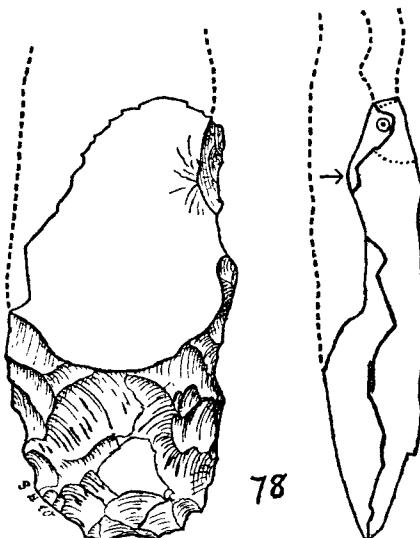


FIG. 7.—PLUNGING-FLAKE-AXE. SCALE $\frac{1}{3}$.

A few of the preliminary forms were sent home for more deliberate study, and these are marked in white paint "*Pre.*," but the greater number were sent direct from the site to various museums.

79. *Pre.*—A characteristic "preliminary," discarded on account of excessive thickness. It appears to have been made from a gigantic flake; the primary flake surface being left unshaded in the diagram. Weight, $21\frac{1}{2}$ pounds. $356 \times 205 \times 141$ mm. [Oxford.]

80. *Pre.-A.*—This is essentially "preliminary" in boldness of flaking, but may rather be grouped with the "intermediate ovates" in size and form; it is made from tabular scree. Re-fitted from two pieces broken by a rather irregular hinge fracture. $290 \times 148 \times 71$ mm. [Cardiff.]

81 (Plate V) *A.*—Photograph of an "intermediate ovate," also re-fitted from two pieces which are differently patinated, or rather one-half remains comparatively fresh and unpatinated. It is made from a flake. $281 \times 161 \times 70$ mm. [British Museum.]

82. *O.*—St. Acheul form of ovate. $178 \times 119 \times 46$ mm. [Manchester.]

There are a dozen or more of the same general group, but most of them are rather more ovate-lanceolate (*OP.*), and approximate to the Late Chelles rather than St. Acheul. Several are made from flakes (*F.O.*, etc.).

83. *P.*—A small example of the preliminary pointed, made from tabular scree. It shows the twist of the edge due to reversed bevelling on either face. 197 × 95 × 33 mm. [Manchester.]

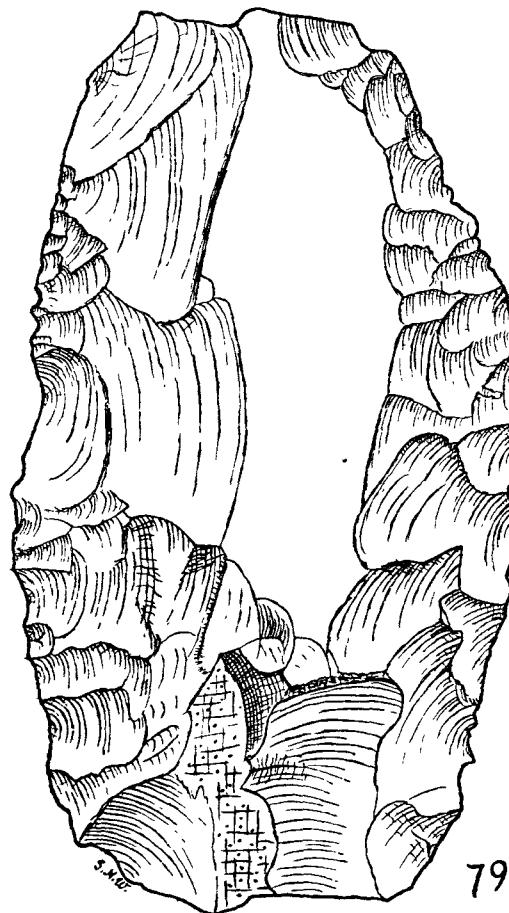


FIG. 8.—LARGE “PRELIMINARY.” SCALE $\frac{1}{3}$.

Some seven others of this *P* group were collected for the first selection, but they are fairly common among the “preliminary” group. A certain number may probably be pointed implements, but many seem to be unfinished pointed-butts axes with only the butt end worked.

XP.—Pointed-butts group. The various groups of more finished axes shade off insensibly into each other, and no hard and fast line can be drawn between them. This sub-group develops from *P* and the more preliminary forms of *OP* and passes into *NP* and *XT*. About 14 or 15 were found on Floor B.

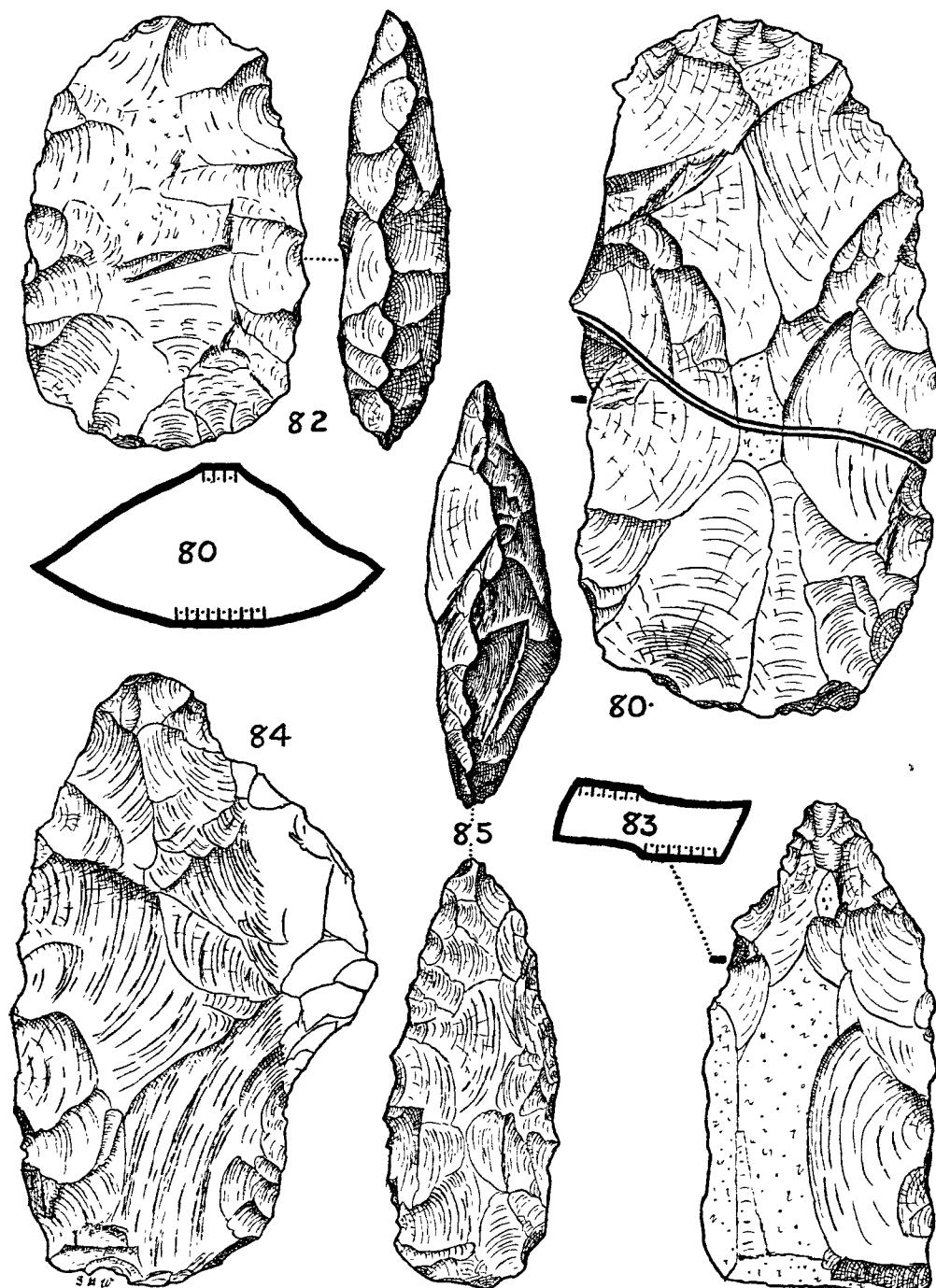


FIG. 9.—“PRELIMINARY,” “INTERMEDIATE,” AND POINTED-BUTT AXES. SCALE $\frac{1}{3}$.

84. Unfinished *xP* with excrescence on one side (other specimens with a similar excrescence, which is frequently battered in ineffectual attempts at removal, are marked in white paint “= 84”). $253 \times 150 \times 88$. [Cardiff.]

85. The type specimen of *XP*, although a little crude in work. This is a weathered specimen from the surface soil on Floor B, but others of the same form occurred in the floor of flakes. $176 \times 70 \times 51$ mm. [Cardiff.]

XT.—The thin-butted group. Axes with broad, thin butts were in overwhelming majority on Floor B. Many of the minor sub-divisions of form, such as *B*, *L*, *DN*, etc., are all thin-butted, while the *D* group may be considered as the extreme of the form. Taking all these together, the thin-butted group in the broad sense does not number less than 190, without counting any of the broken halves.

86. *xT*.—Unfinished thin-butted axe, re-fitted from two “ends of celts.” The two halves were found by two different men, at almost the same time, working several yards apart, and both handed to Mr. Jackson, who fitted them together at once. $235 \times 113 \times 58$ mm. [Manchester.]

87. *F·B*.—This is a very fine thin-butted axe of the broad variety, made from a flake, the flake surface being left unshaded in the diagram. The cutting edge is slightly oblique. $213 \times 113 \times 50$ mm. [Cardiff, and casts to other museums.]

The form *B* develops from *A* and *D* and passes into *XT*, *O*, and *XN*.

88. *XT*.—Thin-butted axe with the cutting edge unfinished, broken during manufacture by an irregular hinge-fracture and re-fitted. $209 \times 77 \times 40$ mm. [Cardiff.]

89. *XT*.—The type of the thin-butted axe, very nearly alike at either end, and thus approximating to the *D* group. This is well finished, ready for polishing, and was probably lost accidentally; it could hardly be deliberately discarded on the waste heap. $142 \times 55 \times 33$ mm. [British Museum.]

Some 21 are classed as of the restricted *XT* form. It develops from *D* (and *X*) and passes into *B*, *XN*, *XP*, *L*, etc.

90. *D-XT-L*.—This specimen is somewhat intermediate between the three groups indicated. It is of excessive thickness, as shown in the side view on the left, and in the nearly circular cross-section through the thickest part. Much labour of battering and pecking, which almost amounts to rough grinding, has been expended on the removal of an uncomfortable excrescence. $218 \times 75 \times 69$ mm. [Manchester.]

L.—Axes of elongated proportions form one of the most natural and one of the largest of the sub-groups on Floor B. Nearly all are thin-butted. The side edges are parallel or slightly expanded at about the middle, many of them are rather thick, and one face is often flatter than the other. They develop from *D* and *PLC*, and sometimes show the influence of *Z*, and pass into *LL* and *XT*.

91. *L*.—Unfinished elongated axe, broken during manufacture by a poorly developed hinge-fracture and re-fitted. $252 \times 110 \times 59$ mm. [Cardiff.]

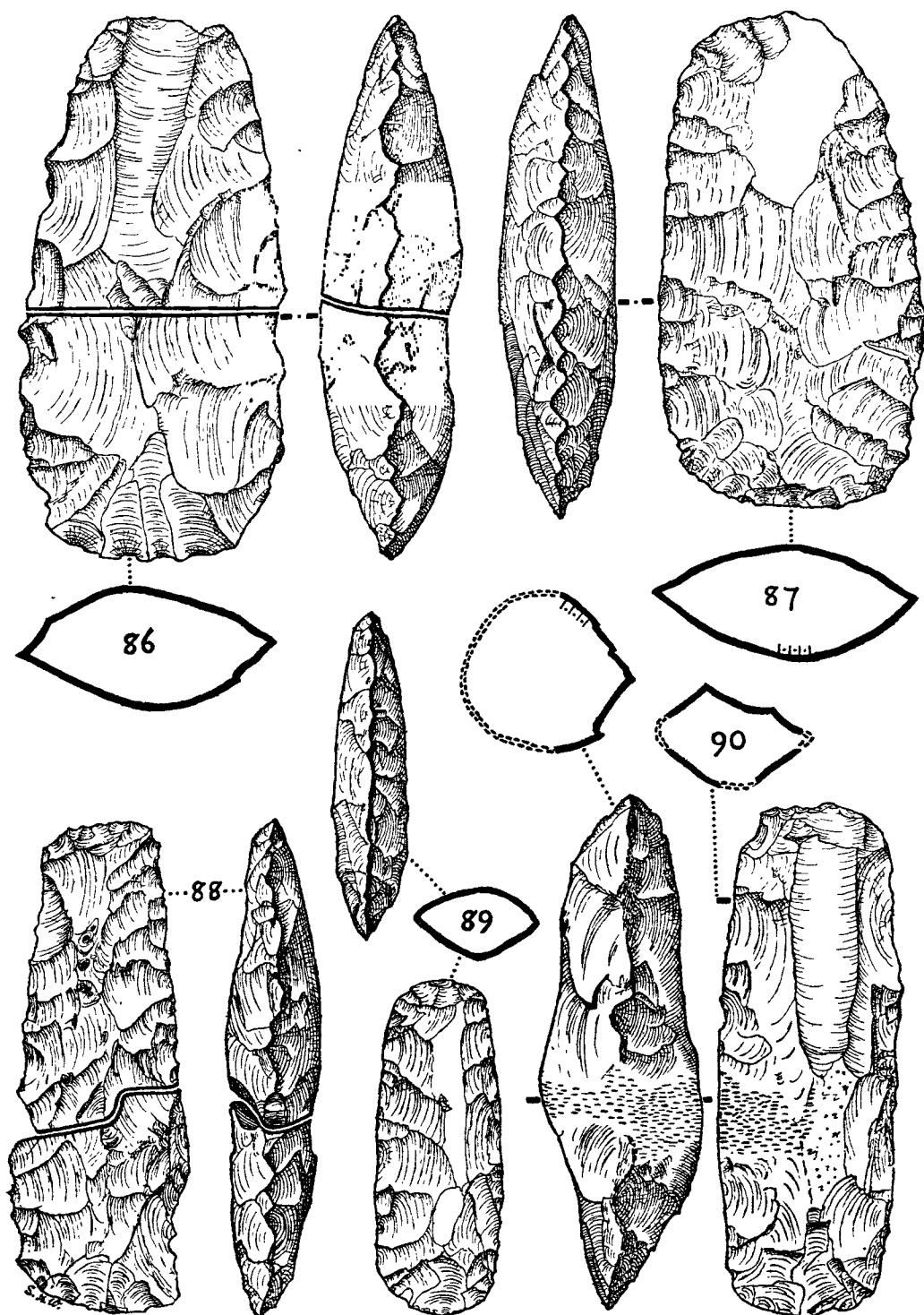


FIG. 10.—THE THIN-BUTTED GROUP OF AXES. SCALE $\frac{1}{3}$.

92. L.—The type specimen of the *L* group. $232 \times 79 \times 55$ mm. [Cardiff.]

91 and 92, with numerous others, are marked in black, “ $\frac{B_1}{3'}$.” These were all found close together just inside the quarry wall at a depth of 2 to 3 feet from the surface. Their close association together, and the striking individuality in the touch and form, suggested that they might all be the work of one man.

LL.—A group which is very elongated and almost chisel-like in form, but without the basil of the chisel-edge.

93. LL.—A somewhat large example of the group, broken during manufacture and re-fitted. $248 \times 59 \times 32$ mm. [British Museum.]

94. LL.—This should be taken as the type specimen rather than 93; similarly re-fitted. $220 \times 41 \times 27$ mm. [Cardiff.]

N.—The expanded edge form with broad thin butt, passing to *DN* the double-expanded edge, or waisted form. Both these groups are rare. Six were classed as *N*, and about three as *DN*, while one or two each were marked *LN*, *NP*, etc.

95. N.—This is a fine blade with expanded edge and thin butt; it was found on the surface at the large hearth and was probably in use. $213 \times 96 \times 52$ mm. [Cardiff.]

96. DN.—As it appears, this is a double-expanded edge or waisted form, broken during manufacture and re-fitted. One must remember that it was unfinished, and a little more flaking at one end would have reduced it to the normal thin-butted form, as suggested by the unshaded portions in the diagram. $193 \times 72 \times 37$ mm. [Manchester.]

D.—Double-ended, squarish at either end. Most of these appear to belong to the “intermediate” group, and may have been intended in some cases to have been finished as thin-butted axes. This can hardly be the explanation in all cases, however, as they pass insensibly into *Dp*, which is clearly a special form to itself. *D* and *Dp* would make admirable weapons of the tomahawk class. About 31 specimens are included in the *D* group.

Double-ended forms have been noted from Cissbury.

97. D.—The type specimen of the group. This, with two others, have “III” marked on them in black. They were found close together in the original surface soil beneath the floor of flakes, and might possibly be a *cache*. $232 \times 104 \times 54$ mm. [Cardiff.]

Another similar set of five (marked “V” in black) were also found in the same position a few yards away. [Manchester.]

Dp.—Double round-pointed group. There is a considerable group of this form, numbering about 34.

98. Dp.—The type specimen of the group, slightly calcined on the big hearth. $216 \times 106 \times 55$ mm. [Cardiff.]

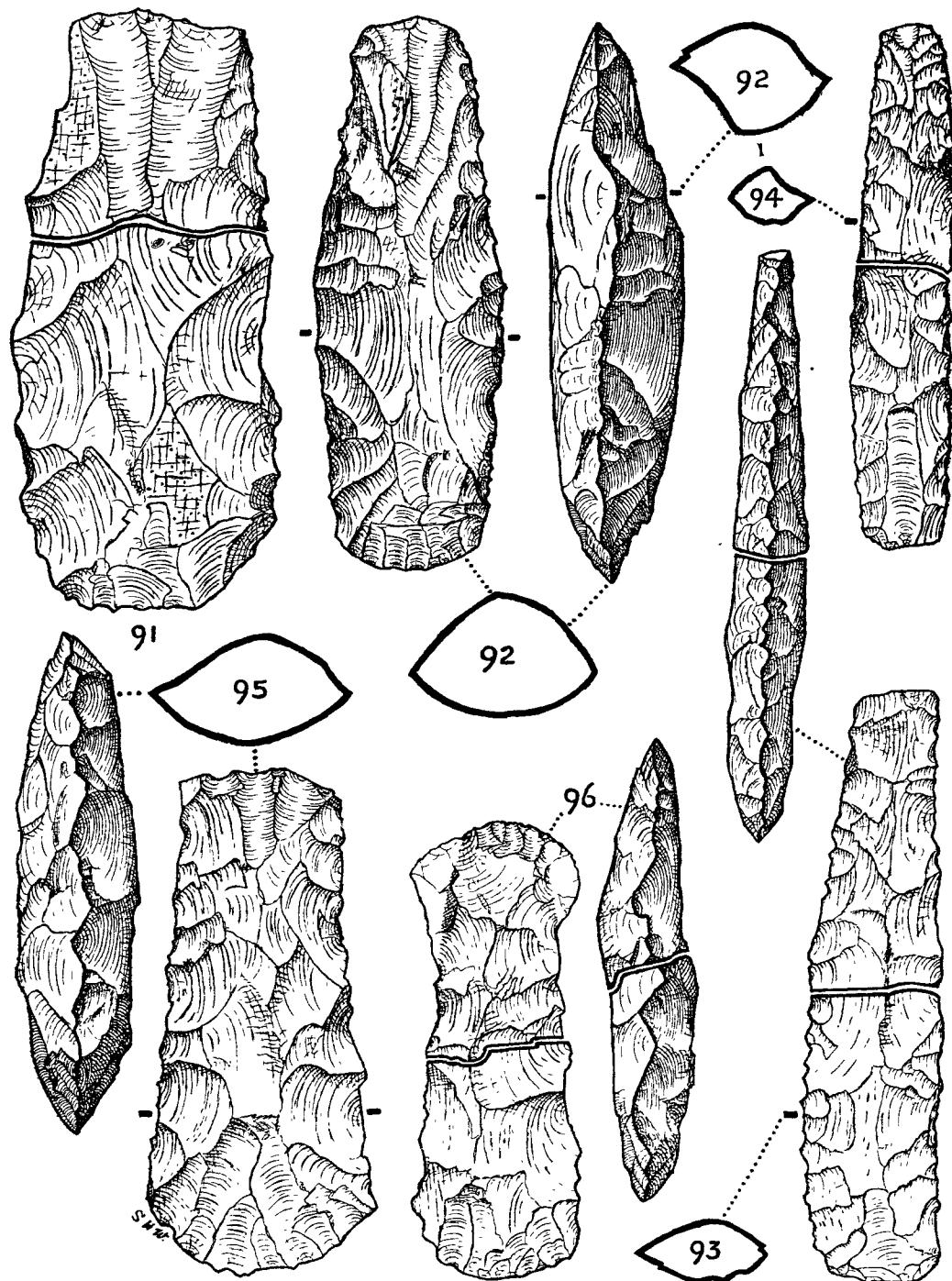


FIG. 11.—AXES OF ELONGATED PROPORTIONS, AND AXES WITH EXPANDED EDGE.

SCALE $\frac{1}{3}$.

DC.—Double-ended, flat on one face. This is nearly related to **D**, but is often more “advanced” in workmanship. It is not uncommon, numbering 11. This form also occurs at Grimes Graves. It may be considered a development from **D** and **F·RZd**.

99. F·DC.—The type specimen of the group, which in this case (as in several others) is made from a flake. The views are of the rounded face and the side, the flat face being the flake surface. $208 \times 76 \times 55$ mm. [British Museum.]

100. An exceptionally small example of the **D** group of forms; made from a flake. $102 \times 50 \times 28$ mm. [Manchester.]

PL.—Pick of Campigny and Thames groups, and **PLD** double-ended pointed picks. There are only two classed strictly as of the broader **PL** form, but thirteen or fourteen of the **PLD** group (three of which are made from flakes), together with twenty or more which are much ruder in work and nearly all made from flakes. The last-named are marked “**F·PL**.”

PL has affinities with **L** and **Z**, and passes into **PLD**, while **PLD** and **Dp** pass insensibly into each other.

101. PLC.—This specimen closely resembles Dechelette’s type of the Campigny pick. It approaches the flat-faced adze of triangular section. It is another re-fit. $250 \times 63 \times 48$ mm. [Cardiff.]

102. PLD.—The type specimen of the Graig-lwyd pick; like several others it shows a rather abrupt, tang-like thinning off of the thicker end. The cross-sections of this group are very irregular, from lozenge, through triangular, to squarish, while thickness is scarcely separable from breadth. 221×64 mm. [British Museum.]

Some specimens which come within, or very near to, this group, have a burin-like termination (on a big scale) at the blunter end.

103. Lunate double pick. $174 \times 56 \times 34$ mm. [Cardiff.] There is one other (marked “= 103”) of this unusual form.¹

104. F·PL.—Flake-pick of unusually delicate workmanship and symmetrical form. Worked only on one face. $214 \times 38 \times 26$ mm. [Cardiff.]

Z.—The adze group. The question of the axe and the adze was referred to in the previous paper. Apart from the flake-adzes, to be dealt with separately, this group scarcely numbers a dozen.

105. XT-Z.—A thin-butted axe, approximating to the adze in the balance of the blade, with the unusual character of one squared side edge, which is shown in the side view. $226 \times 86 \times 57$ mm. [Cardiff.] There is one other (marked “= 105”) with a similar squared side.²

¹ Also two ruder examples in my own collection.

² Since the paper was written I have obtained another of similar character, with a very strong adze-curve.

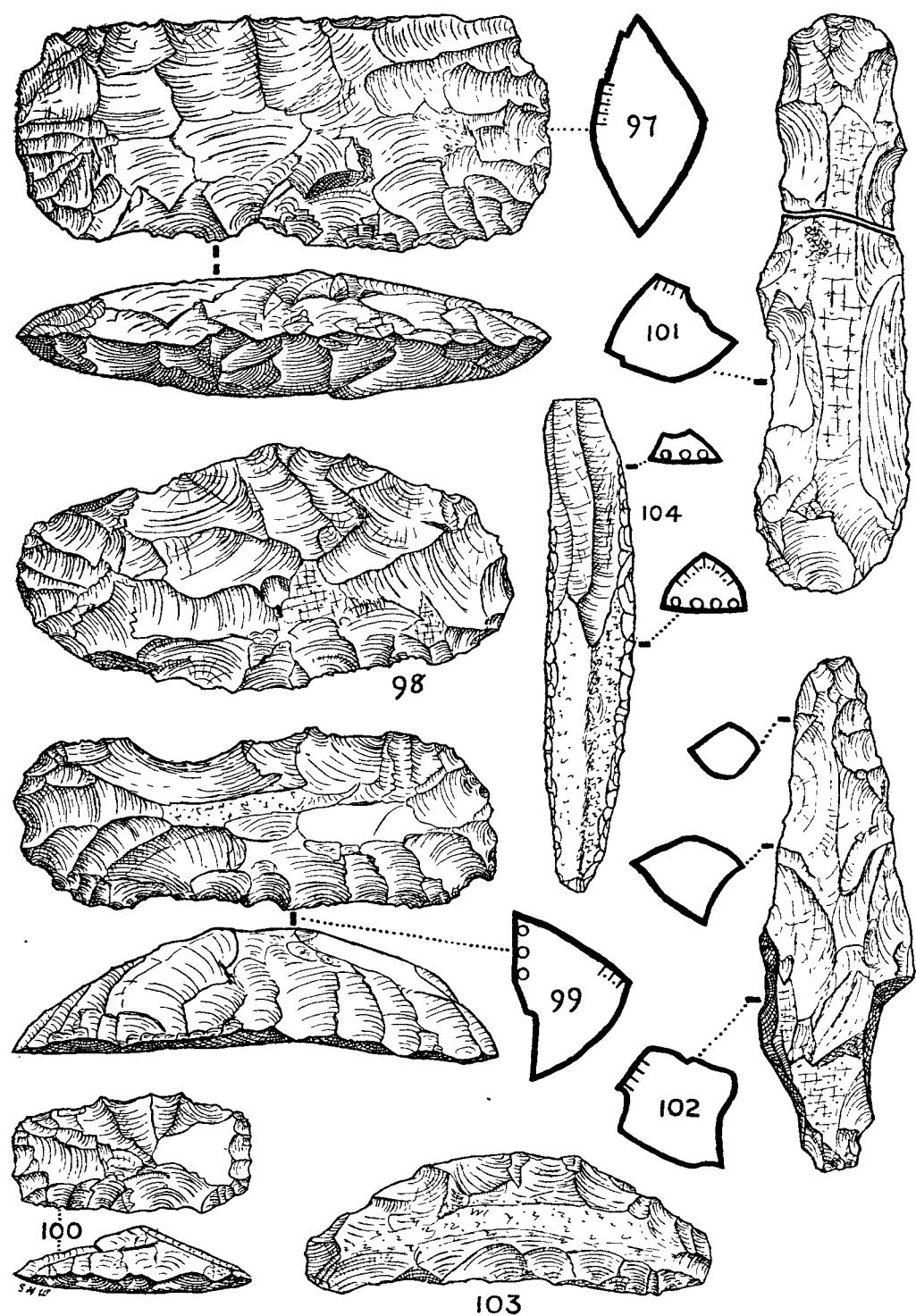


FIG. 12.—DOUBLE-ENDED AND PICK FORMS. SCALE $\frac{1}{3}$.

106. Z.—The type specimen of the flat-faced adze with triangular section. The face view shows the ridge, and the side view has the ridge on the left. $231 \times 88 \times 68$ mm. [Manchester.] There are eight or nine others of similar form, some of them very large, and mostly made from flakes; three of the most nearly similar are marked “= 106.”

107. PLD-Z.—Adze-like example of double-ended pick. This is not a “re-fit” in the sense in which that term is used here, but was broken by the pick of the workmen during the digging, and the only specimen of any consequence so damaged. $196 \times 56 \times 46$. [Cardiff.]

108. XZ.—This is of adze-like form, not (like the type 106) by virtue of its

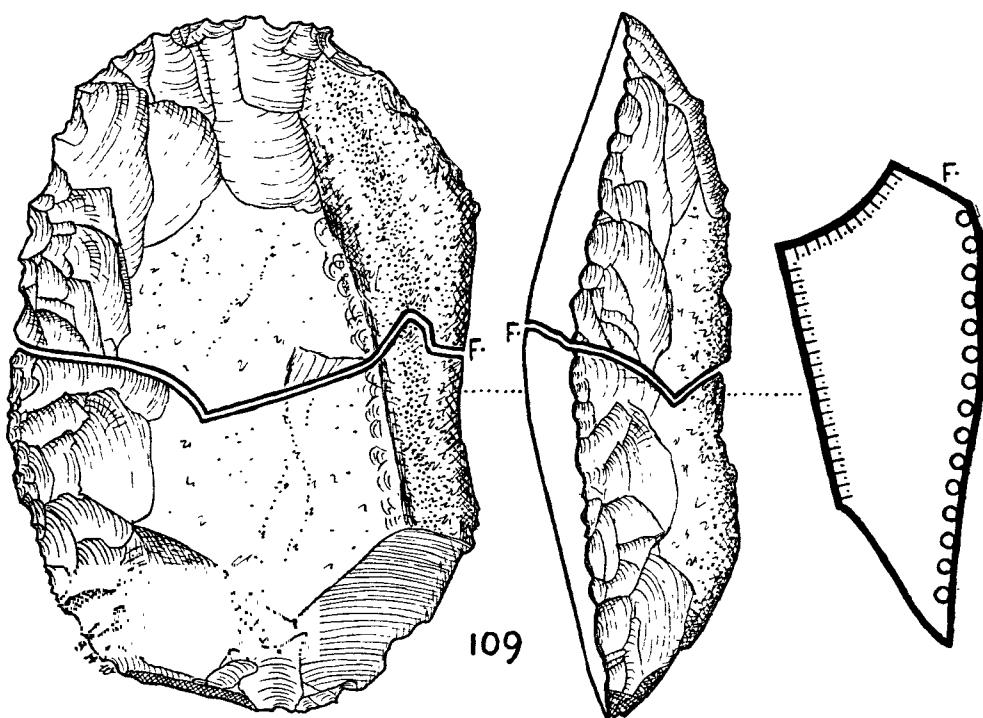


FIG. 13.—UNFINISHED AND RE-FITTED FLAKE-ADZE. SCALE $\frac{1}{3}$.

strong basal edge, but by longitudinal curvature shown in side view only. $188 \times 75 \times 53$ mm. [Cardiff.]

There are three others similar (marked “= 108”).

We now come to the extensive group of the flake-adzes, of which rather more than 100 were included in the selected series, and about as many again sent direct from the site to various museums. The best finished examples group themselves into two sub-classes, namely:—

F-RZ.—Flake-adzes showing, in their form, more or less affinity with the *râcloir*.

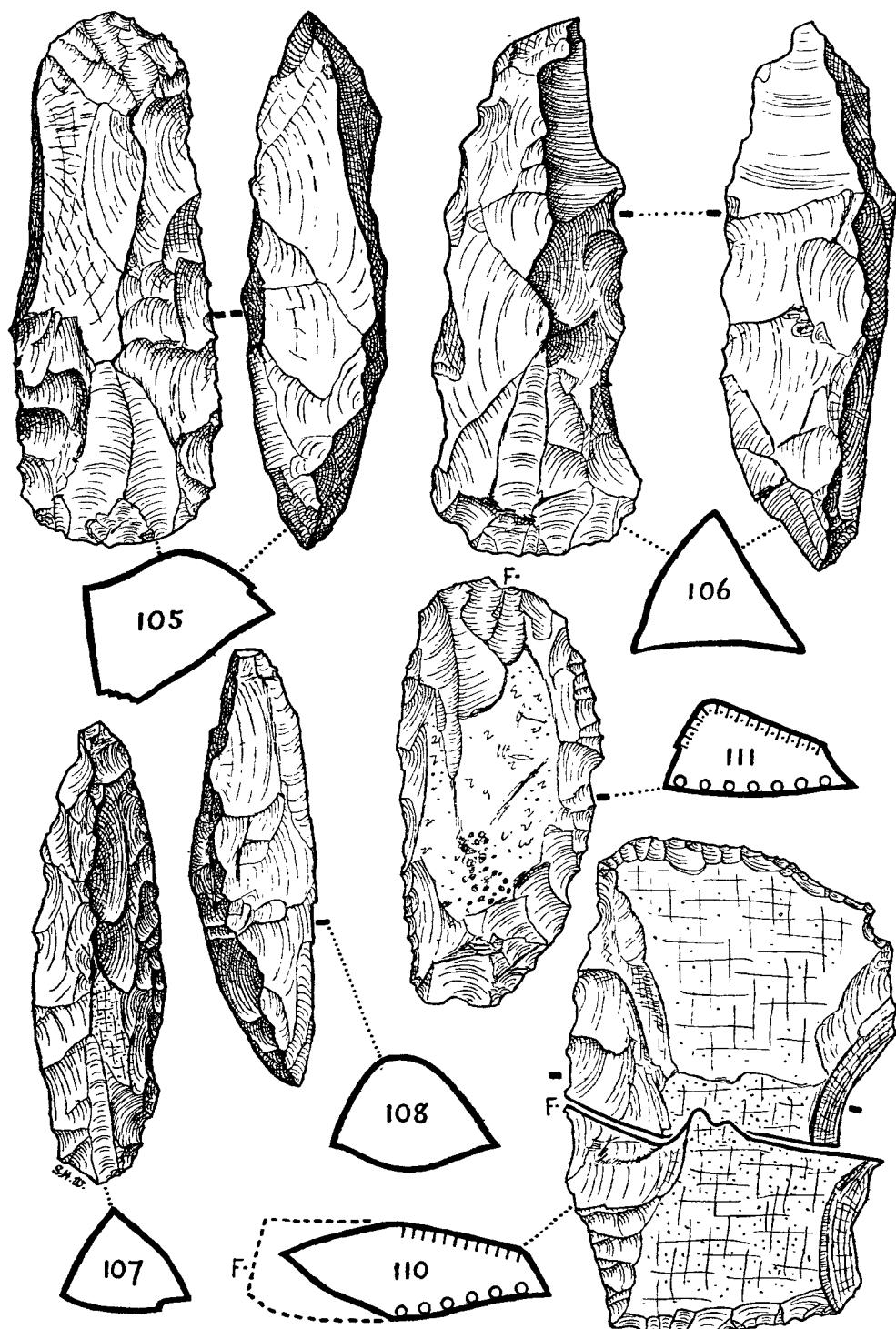


FIG. 14.—ADZES AND UNFINISHED FLAKE-ADZES OF RÂCLOIR-LIKE FORM. SCALE $\frac{1}{3}$.

F·GZ.—Flake-adzes similarly showing affinities with the *grattoir* or end-scraper.

The **F·RZ** group develop from the *râcloir* form, while those with a more pointed butt pass into **XP**, and those with a basal at either end pass into the **DC** form. The

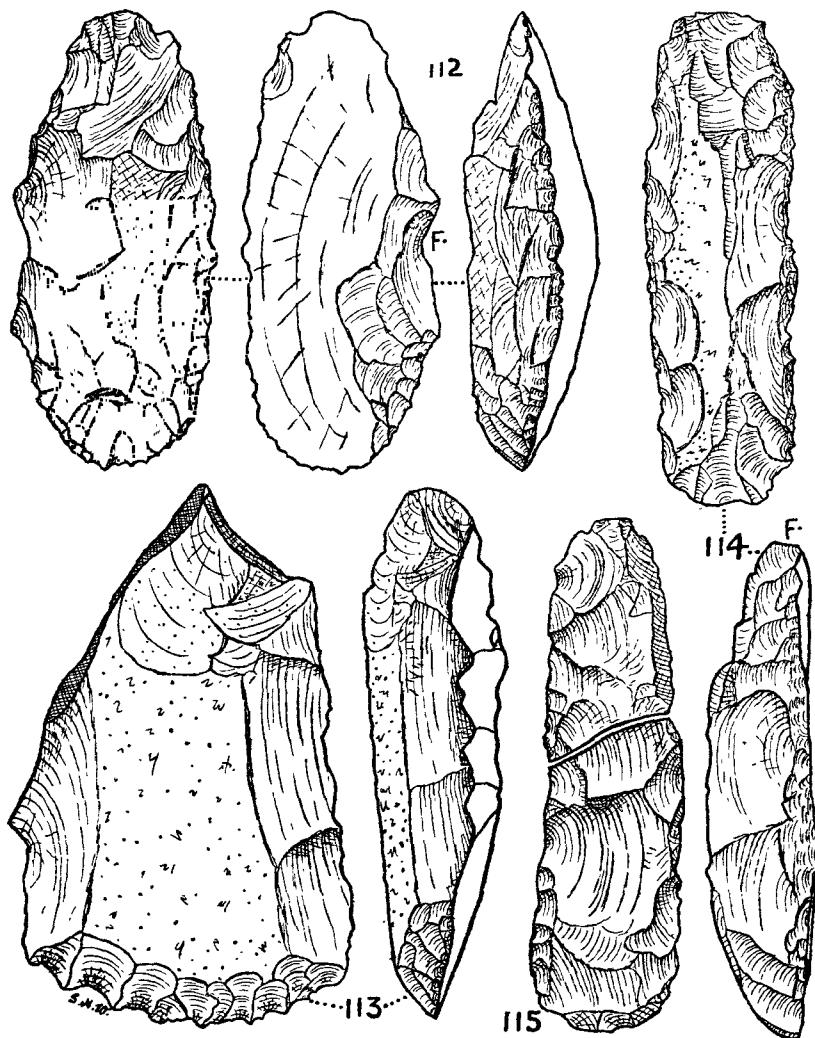


FIG. 15.—FLAKE-ADZES. SCALE $\frac{1}{3}$.

F·GZ group and the spoon scrapers pass insensibly into each other, and are scarcely to be distinguished except in size.

109. F·R(Z).—One might be tempted to describe this fine re-fitted specimen as a majestic *râcloir*. The inner face is untouched; and the arrested working (through breakage) has left it in the *râcloir* stage, the intended adze form being nascent. $272 \times 185 \times 82$ mm. [British Museum.]

110. F·RZ.—Also unfinished through breakage. I had classed these two pieces separately as being examples of the pseudo-Mousterian *râcloir*-point. The re-fit was made by Mr. Burkitt when going through the collection ; this incident shows how far one may be from the truth when dealing with breakages. $208 \times 135 \times 44$ mm. [Manchester.]

111. F·RZ.—Another intermediate form between the apparent *râcloir* and the intended adze. $182 \times 87 \times 46$ mm. [Cardiff.]

112. F·RZ.—The type specimen of this variety of flake-adzes, of which there are 24 or 25 others similar, and nearly 50 more that are ruder. This shows well the fan-flaking of the basil edge which is so characteristic of the group. $179 \times 81 \times 50$ mm. [Cardiff.]

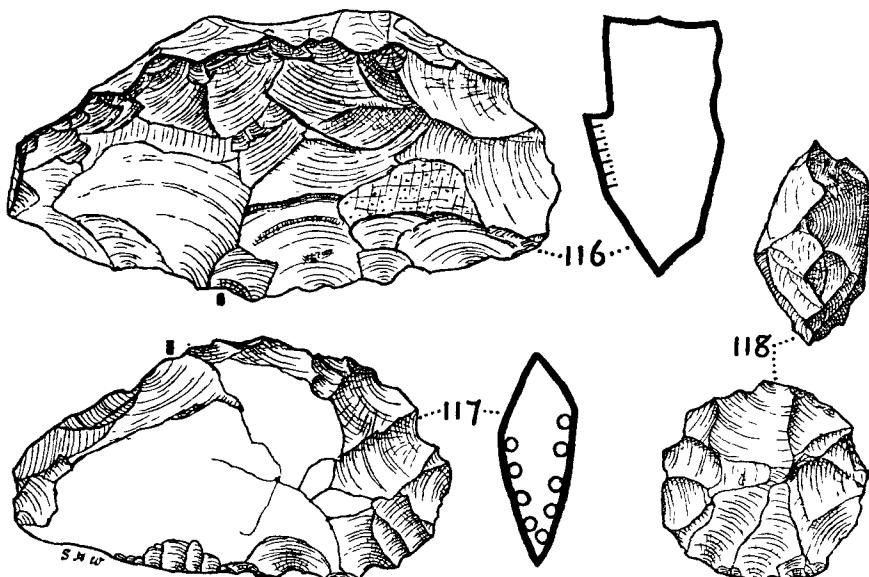


FIG. 16.—SIDE-CHOPPER, DISC, ETC. SCALE $\frac{1}{3}$.

A few of this series have a similar basil at either end (*F·RZd*). Many of them have the swelling of the butt reduced by flaking on the inner face. The type 112 shows this feature.

113. F·Z.—This is a good example of one of the many variations of the flake-adzes with basil edge ; in this case the edge is engrailed. There is considerable secondary flaking on the inner face. $208 \times 131 \times 51$ mm. [Cardiff.]

114. F·GZ.—The type specimen of the *grattoir*-like adzes, of which there are some 12 or 14 others. $190 \times 56 \times 41$ mm. [Cardiff.]

115. GZ.—This is so much like the type 114 that one can hardly place it elsewhere, but it is unusually thin for this group, and it is not made from a flake, but the flat face is completely flaked. It is another re-fit. $195 \times 56 \times 28$ mm. [Manchester.]

S.—Side-choppers with thick back for grasping in the hand. This is not a very common form, but there are a good many half-axes which will stand up on the flat fractured surface that greatly resemble them. It passes into the semi-circular form *DS*, with an edge all round.

116. *S.*—Side-chopper with well-squared back. This was the first specimen found during the excavations. Compare 105. $111 \times 216 \times 56$ mm. [Cardiff.]

There are two others with squared back, and one with a naturally square back, rather like No. 67 of the previous paper.

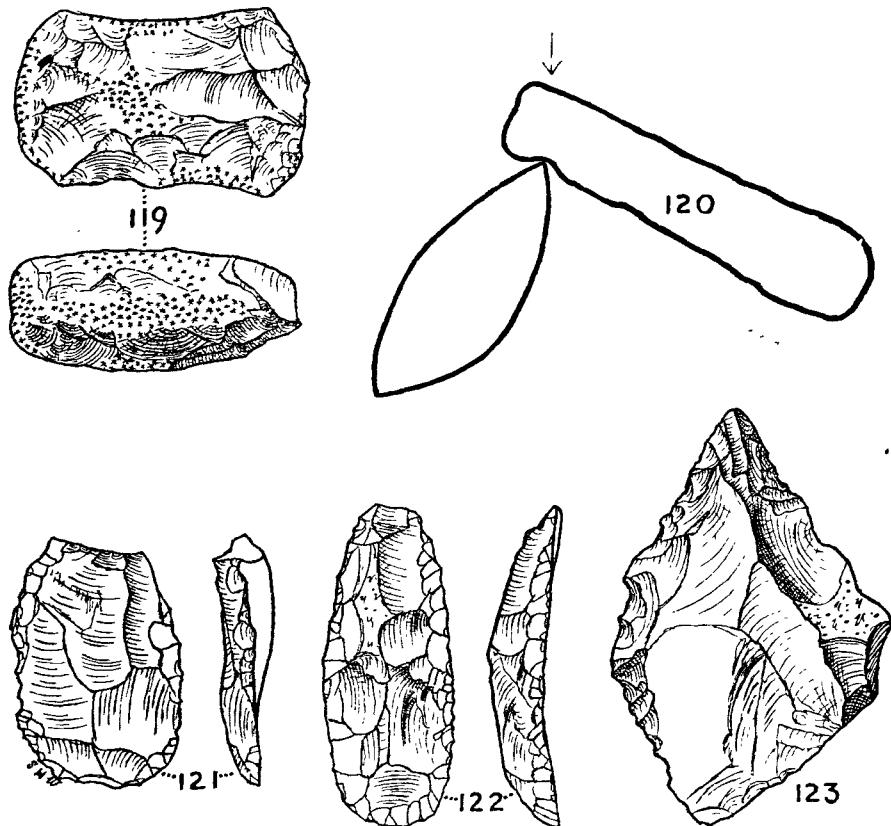


FIG. 17.—HAMMERS, SCRAPERS, ETC. SCALE $\frac{1}{3}$.

117. *F-DS.*—Nearly semi-circular knife-like form. $93 \times 171 \times 35$ mm. [Cardiff.]

This form was better represented in my previous year's finds than on Floor B (see Nos. 60 to 64 of previous report).

118. Disc; the only example found. 81 (diam.) $\times 44$ mm. [Cardiff.]

119. Waisted axe-hammer, probably made from a broken axe. Partly shaped by battering and pecking. $113 \times 73 \times 46$ mm. [Cardiff.]

Hammer-stones.—The majority of the hammer-stones were pebbles of hard erratics picked up on the sea beach, but pieces of the local rock, and broken axes,

were also brought into service. The best specimens are spherical in shape and extremely battered all over ; these usually weigh from one to six pounds, the most usual weight of the well-worked spherical hammer-stones being about three pounds.

120. This diagram illustrates the manner in which broken axes, or cylindrical pieces of stone, are frequently battered away into a small hollow, from use as hammers in the flaking of axes, evidently in the manner shown in the diagram. No one specimen individually is figured as the type, but several are marked “ = 120.” The larger hammer-stones made of elongated pebbles were also used sideways in the same manner.

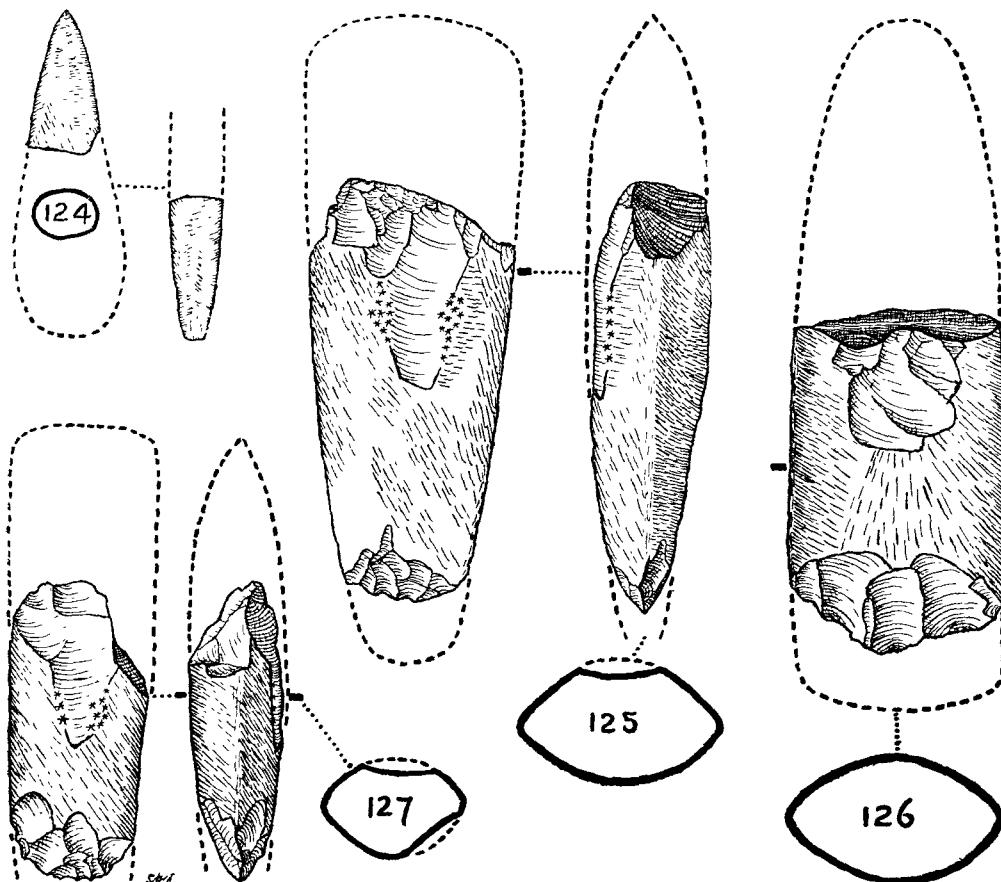


FIG. 18.—POLISHED AXES. SCALE $\frac{1}{3}$.

G.—True scrapers are somewhat rare, but a certain number are found, and they are made of the same rock as the axes. The majority of these are elongated spoon scrapers, with secondary flaking down the side edges, as well as round the end. These grade imperceptibly into the flake-adzes of the F.GZ form, and it is impossible to draw a clear line between them.

121. This is the nearest to the normal horseshoe *grattoir*. $93 \times 64 \times 19$ mm. [Cardiff.]

One other similar specimen is marked “ = 121.”

122. Elongated spoon-scraper, of admirable symmetry and workmanship, with fan-flaking (like that on a larger scale of types 112 and 114) round the end. $123 \times 51 \times 23$ mm. [Author's Collection.] This specimen was dug out of the floor by my wife.

Two other similar specimens are marked “= 122”; while six more (marked “= 122-Z”) are intermediate forms to type 114.

123. Pseudo-Mousterian point. This was found in a chipping floor on the top of the southern spur of Graig-lwyd, and about 300 yards to the north of the Carneddau cairn. It is the only example of the form, and is very notably Mousterian in appearance, worked only on one side of the flake. The extreme point is broken off. $159 \times 109 \times 42$ mm. [British Museum.]

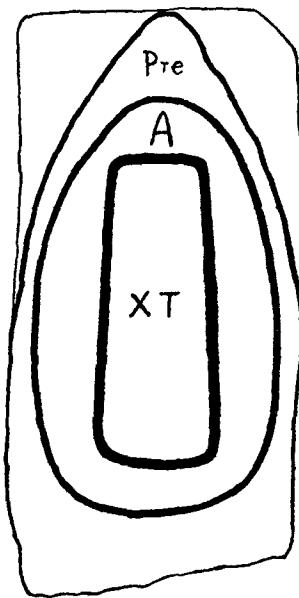


FIG. 19.—THE FLAKING OF THE
AXE FROM SCREE. SCALE $\frac{1}{3}$.

THE POLISHED AXES.

124. Broken piece of polished axe. On the left it is illustrated on the supposition that it was a butt end, while the outline is suggested on the basis of the “Carib” axe. It is not, however, a pointed butt, and it seems to have been re-sharpened at the original butt end to form a chisel, as suggested to me by Mr. H. Balfour, and illustrated on the right. $56 \times 27 \times 19$ mm. [Manchester.]

125. Broken polished axe, re-chipped as a make-shift blade to a new edge at the original butt end. There is a large hafting flake, and the worn marks or “pecking” of the second hafting are indicated by stars. $164 \times 79 \times 45$ mm. [British Museum.]

126. A similar example, with a broader make-shift second edge. $131 \times 83 \times 50$ mm. [Cardiff.]

127. A smaller instance of the same features, more like 125. Also with the "hafting-flake," and the wear or pecking of the second haft. $116 \times 57 \times 36$ mm. [Author's collection.]

The above four axes present the unusual feature of having been polished on a plain flat stone, and not in a groove: the striæ pass obliquely across the blades, as shown by the lines.

The polishing does not seem to have been executed on the site, and my wife has made the admirable suggestion that it may have been done on the sea-shore. We know that they carried the sea-beach pebbles up to the site for hammer-stones.

I would suggest that these polished axes were broken by their users where they

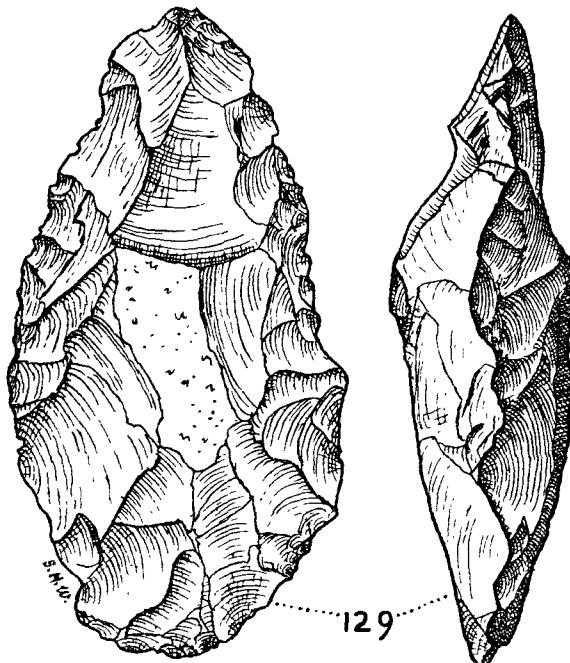


FIG. 20.—PALÆOLITHIC RESEMBLANCE. SCALE $\frac{1}{2}$.

lived, away from the site, and re-worked into make-shift blades; and that when they returned to the working site to make themselves new blades they left the old broken pieces behind them among the waste.

PALÆOLITHIC RESEMBLANCES.

The diagram, "the flaking of the axe from scree," indicates in a general way the more usual successive stages. There is firstly the natural scree, roughly rectangular. Secondly, the preliminary pointed stage, *Pre.* (Chelles-like). Thirdly, the intermediate ovate, *A.* (St. Acheul-like). Lastly, the finished Neolithic axe, *XT*.

In flaking an axe, the tendency to excessive thickness is the most serious difficulty which has to be overcome. It is essential that a suitable thinness must be

attained in the earlier stages, or the intended blade must be discarded as a failure. When the proportion of thickness to width (that is, the flaking angle of the edge) is too high, it cannot be successfully reduced ; the more it is flaked the worse it becomes.

129¹. OP.—This greatly resembles the Late Chelles forms in outline, although the free boldness of the flaking would rather be Early Chelles. 253 × 130 × 70 mm. [Cardiff.]

Many other palæolithic resemblances have been figured in the earlier part of the paper, notably 81, 82, 109, 111, 123, to say nothing of the innumerable “Levallois” flakes.

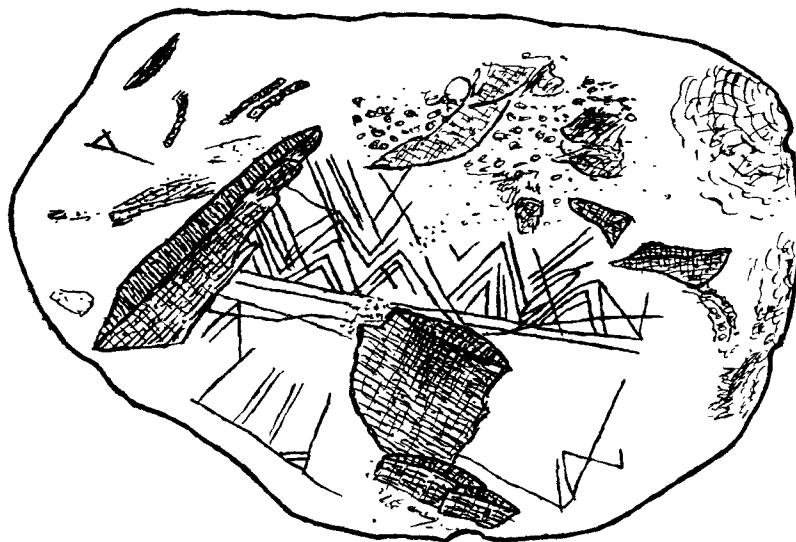


FIG. 21.—NO. 130, ENGRAVED STONE PLAQUE. SCALE $\frac{3}{4}$.

ENGRAVED STONE PLAQUE.

130. Stone plaque which shows mainly a series of triangles engraved on a double base-line. The lines are extremely fine, but there are larger and deeper artificial cuts which damage the original design. There are also artificial cuts on the other side of the stone. In the British Museum there are two stone plaques from Portugal, perforated for suspension, with more highly elaborate triangular designs ; one of these being figured in the *Stone Age Guide Book*. A stone plaque with chequered pattern was found at Glastonbury, and it is noteworthy that this, like the Graig-lwyd piece, has subsequent cuts which damage the original engraving (see *The Glastonbury Lake Village*, by A. Bulleid and others, Vol. ii, p. 623, Fig. 178 ; where other similar discoveries are referred to). Compare also an engraved whetstone from Ireland (J. W. Jackson, *Manchester Memoirs*, Vol. liii, 1919, No. 10).

¹ No. 128 has been withdrawn.

One can only assume that these engraved plaques possessed some mystic or ceremonial significance. This specimen (No. 130) was found in Floor B. [Cardiff.]

THE DATING OF THE INDUSTRY.

In the previous paper it was stated that the "pointed-butt axe" was the prevailing form from the Graig-lwyd site. In Scandinavia this form is considered to be representative of an early stage of the Late Neolithic, immediately before the introduction of the dolmen, the representative axe of the next succeeding stage in Scandinavia (that is, of the early dolmen period) being a form with broad thin butt and squared sides.

Although there are a good many axes at Graig-lwyd with broad thin butts and sharp sides, the above is still the conclusion I should give with regard to the site as a whole.

On Floor B the overwhelming majority are thin-butted; the pointed-butt form being present, but relatively rare. Supposing that the Scandinavian succession applies to this country, the evidence would seem to suggest that Floor B belongs to a late stage of the Graig-lwyd workings, and should be of about the same date as the earliest dolmens.

Some squared working is to be noted in some of the exceptional and aberrant forms from Floor B, but nothing approaching the squared sides of the Scandinavian dolmen stage is seen on any normal axe from Graig-lwyd, not even on the polished examples. This fact must not be overlooked in considering these comparisons.

One or two of the axes (like 77) are accidentally "blunt-butted," but this is not an intended form on the site.

It is unfortunate that no pottery was found. Loose scree on an exposed mountain side is unfavourable for preservation. I saw a few scraps of bone about the size of a finger-nail, but they were quite worthless, and disintegrated as soon as they were touched. The remains of a donkey with iron shoes was encountered in the surface soil. The only fauna found on Floor B was a nest of baby voles—alive!

From washing the original surface soil, beneath the prehistoric floor of flakes, I obtained a number of seeds which Mrs. E. M. Reid has been kind enough to examine. The list is as follows :—

- Ranunculus hederaceus *Linn.*, 2 achenes. Ivy-leaved crowfoot.
- lingua *Linn.*? 1 small, badly preserved. Great spear-wort.
- Stellaria uliginosa *Murr.*, 4 seeds. Bog stitchwort.
- Silene sp. ? (possibly *gallica*), 1 seed, very badly preserved. Catchfly.
- Montia fontana *Linn.*, very numerous. Blinks.
- Urtica dioica *Linn.*, 3 or 4 nuts. Nettle.
- Corylus avellana *Linn.*, fragment of nut (unmistakable). Hazel nut.
- Phelum (arenarium *Linn.*?), seed in glume. Cat's tail.

Deschampsia flexuosa *Trin.*, seed in glume with aur. Hair-grass.

Many galls.

Many fragments of insects' wings, cases, eggs, etc.

Many small fragments of wood.

Mrs. Reid remarks that "the seeds are those of common plants, mostly water plants, and afford no evidence as to age."

It seems to me rather noteworthy that the assemblage should be that of a marsh, as the situation is now a dry one. It is, however, near to the outflow of an unfailing spring, and the change of character may be due to the artificial use of the spring water rather than to change of climate.

COMPARISON WITH FLINT WORKING SITES.

The student will scarcely need to be reminded of the similarity of the Graig-lwyd industry to that of the Neolithic flint axe-working sites, such as Grimes Graves or Cissbury. Considering the differences in the form and flaking qualities of the raw material, the similarity is greater than one would think possible. With reference to the important influence of the form of the raw material, we have on the flint-working sites the rounded or branching flint nodules, and at Graig-lwyd the sharply angular, and frequently very large, blocks of scree. In flaking quality the Graig-lwyd rock is very much tougher and more difficult to keep under satisfactory control than flint.

One is forced to the conclusion that the Graig-lwyd technique was first established on the site by migrating tribes who had originally become skilled in the art of flaking flint. It may be that they were the Neolithic tribes which formerly inhabited the more eastern plains of England, and who were driven to seek refuge in more inaccessible mountain areas by Bronze Age invaders from the Continent.

EXCAVATION OF HUT-CIRCLE BY MESSRS. JACKSON, PHELPS, MANBY GIBSON, AND THE WRITER.

This was one of a group of three or four situated on a comparatively level platform in the steep slope, within the axe-working area, to the east of the quarries, as shown on the sketch map, the one selected for excavation being about 20 yards from the cross-wall.

The hut-circle proved to be 13 feet in diameter inside, with entrance to the east. It was built of dry stone masonry, well faced with selected flat pieces. The floor was 4 feet below the surface on the up-hill side, and 1 foot on the lower side. It was paved with flat tabular pieces averaging about $1\frac{1}{4}$ inches thick. There was 2 feet 6 inches of well-preserved wall left on the up-hill side. The surface outline of stones, protruding through the turf and forming the familiar hut-circle ring, was of greater diameter to an extent of some 5 or 6 feet than the inside of the underlying walls.

Some 200 flakes were picked out from the infilling of the hut, and more than a dozen axes in various stages of manufacture. One well-made half-axe, and several other pieces, were found deeply built into the hut-walling below the surface of the ground. These were all deeply patinated, and had evidently been picked up from the surface, just as such objects are still built into the dry stone walls by the farmers of to-day. This clearly showed that the hut-circle was of much later date than the axe-workings.

The contemporary remains consisted only of a spindle-whorl and a whetstone. The former was a thin disc, cut flat on either side by a metal saw, measuring nearly 32 mm. in diameter, and 5·4 to 4·4 mm. thick, with a perforation of 9·7 to 10·2 mm. diameter.

The whetstone is a rod of square section, measuring 191 × 21 × 19·3 mm.

All these remains have been sent to Cardiff.

Within the Quarry property, there is also another group of hut-circles ; and a large series of tumuli on the high peaty ground near the magazine. I could not find much evidence of axe-working in the neighbourhood of the tumuli, and think that they may be of later date.

THE IDENTIFICATION OF THE GRAIG-LWYD AXES WHEN FOUND ELSEWHERE.

This question was discussed in the previous paper, but for the sake of reasonable completeness in the present report the more important points to aid in the recognition of the rock may be briefly mentioned. In general appearance the Graig-lwyd rock is close-grained, and when fresh is usually blue, or more rarely greenish or banded in colour. In the compact ground mass there are visible crystals of felspar, the greater number of which are less than 5 mm. in larger diameter, with few exceeding 7 mm. These visible crystals are usually from 15 to 30 mm. apart, but are sometimes closer. On weathering it becomes whitish and very porous ; while the visible crystals of felspar become at first kaolinized, and finally removed, leaving corresponding cavities.

Dr. H. H. Thomas, F.G.S., of the Geological Survey, has kindly cut special sections to aid in the identification of possible Graig-lwyd axes, and he remarks that the small phenocrysts (or visible crystals of felspar) consist of turbid plagioclase. Under a magnification of about 25 diameters the ground mass can be seen, either in thin sections, or by the application of clove oil to the surface without damaging the specimen, to consist of "small rounded crystals and crystal-groups of augite, and still smaller decomposed crystals of rhombic pyroxene in a micro-crystalline matrix of quartz and felspar with rods and isolated crystals of magnetite," the last named being particularly noticeable by the surface examination with clove oil.

I have seen several axes in museums which I believe were made at the Graig-lwyd factory, including a fine polished axe from Anglesea in the Salford Museum,

but none of them is sufficiently far from the site to be of any great interest from our present point of view.

Mr. T. Sheppard has recently been studying the Yorkshire axes, and some have been examined in thin sections by Dr. H. H. Thomas. No Graig-lwyd rock has been identified there, but Borrowdale ash is largely represented.

Mr. D. M. S. Watson has discovered a very interesting working-site in the Lake District, in fact his discovery was prior to mine, although I did not know of it then, and the specimens are in the Manchester Museum. The technique is similar to Graig-lwyd, but the site is quite small, being confined to work on an isolated boulder.

The output of axes from the Graig-lwyd site must have been very large, yet except to Anglesea and very possibly to the submerged forest area of the northern coast of Wales, we do not yet know what has become of them.

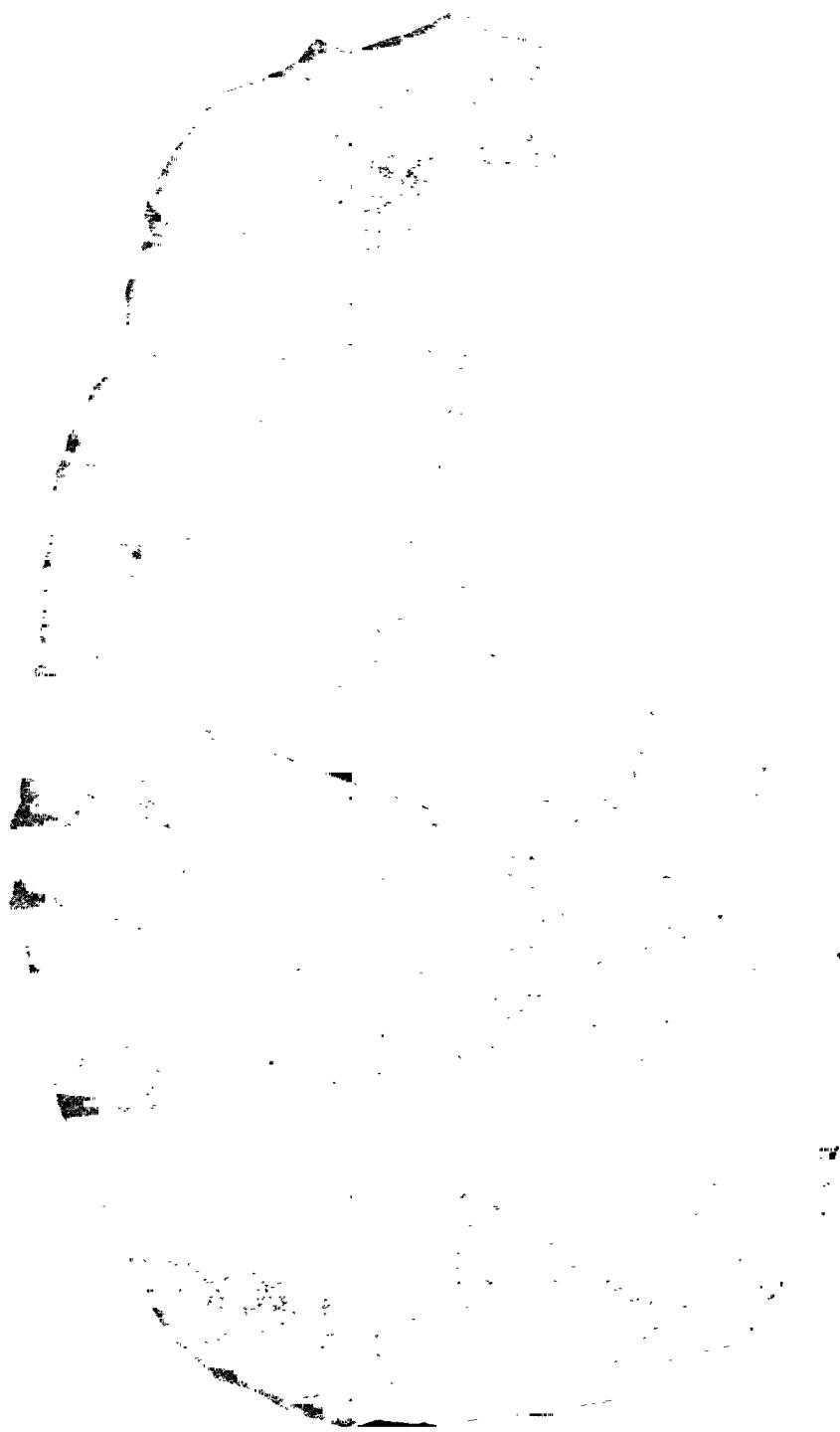
Graig-lwyd does not appear to have been a permanent living site, so far as one knows at present, and it does not seem probable that a settled industrial population would have carried on the work there. By the analogy of the practice of modern savages, it is much more probable that tribes would trek to the site for the celebrated stone of good quality when they wanted new implements. If this were so, we have yet to discover where they lived.

DESCRIPTION OF PLATES.

Plate V.—See text, No. 81.

Plate VI.—1. Graig-lwyd from the north-east. The conspicuous buildings are these of Graig-lwyd farm; the German prisoners' path (where the prehistoric factory was first identified) cuts across the slope just above the farm. The lighter patch (74 mm. from the left and 30 mm. from the top), just below the quarry tips, is due to the excavation of Floor B. Two small white patches at 52 mm. from left and 27 mm. from the top are trial holes in white "sinter" where there is a spring. 2. Section of Floor B under the quarry wall, showing the mass of flakes *in situ*. The two-foot rule shows the scale.

Plate VII.—1. The excavation of Floor B outside the quarry wall, against which Mrs. Jackson and the writer's wife are sitting in the background. The writer is watching the work of the two men in the foreground. Photograph by Mr. J. W. Jackson. 2. Inside the quarry. In the foreground is the ancient scree overgrown with turf. The loose scree in a heap near the centre is the result of our digging of the hearth site. 3. Section of Floor B, with an unfinished axe *in situ* to the left of the folded rule. 4. Graig-lwyd from the high ground to the south-east, looking over Penmaenmawr village and the sea. The gap is the eastern end of the quarry; the position of the summit of Graig-lwyd (now removed by the quarry) is to the left of this gap. There is much flaking along the top of the ridge to the left. The excavated hut-circle is 38 mm. from the left and 30 mm. from the top of the picture. The

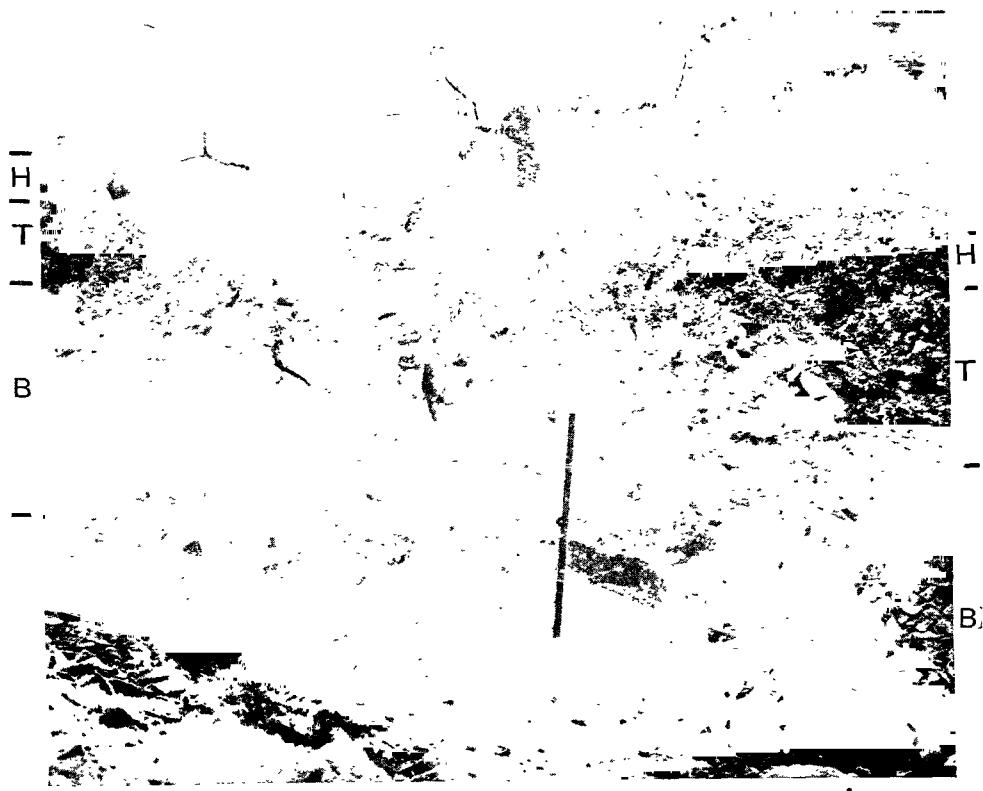


"INTERMEDIATE OVATE," RE-FITTED FROM TWO HALVES IN DIFFERENT PATINATION. SCALE $\frac{2}{3}$.

EXCAVATIONS AT THE STONE-AXE FACTORY OF GRAIG-LWYD, PENMAENMAWR.

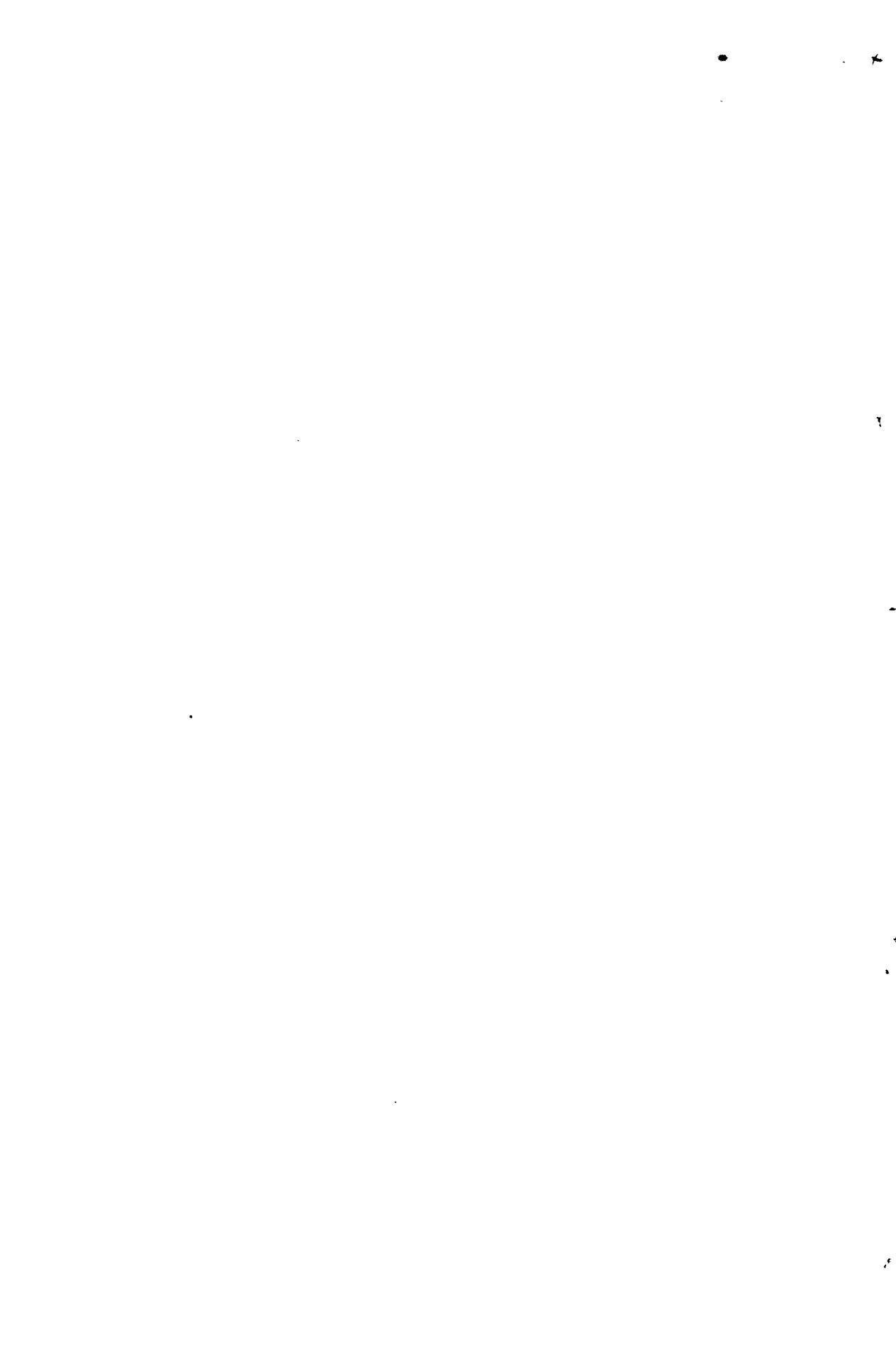


I.—GRAIG-LWYD FROM THE NORTH-EAST.



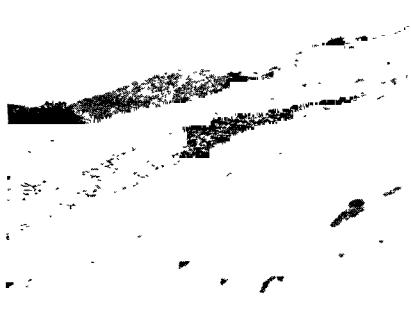
2.—SECTION OF THE ACCUMULATION OF FLAKES ON FLOOR B, GRAIG-LWYD.

EXCAVATIONS AT THE STONE-AXE FACTORY OF GRAIG-LWYD, PENMAENMAWR.





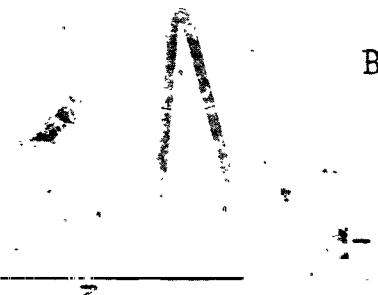
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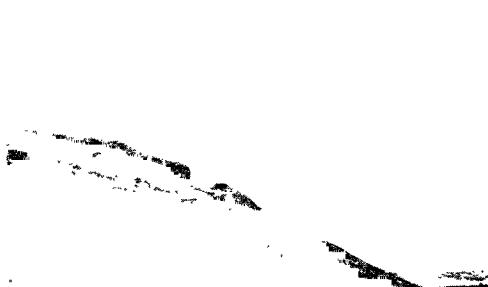
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B



3



4



5

PHOTOGRAPHS OF THE GRAIG-LWYD SITE.

EXCAVATIONS AT THE STONE-AXE FACTORY OF GRAIG-LWYD, PENMAENMAWR.

site of Floor B is hidden round the outer spur of the mountain. 5. The digging of Floor B, with a group of large unfinished axes in the foreground, and the tip of flakes thrown up by our work. The Green Gorge, at the top of which the first outlying site of flakes was discovered, is the gap in the sky-line 17 mm. from the left of the picture.

The lettering on the side of the photographic sections corresponds with that of the diagram section on page 171. The dark line under B in Pl. VI, Fig. 2, is the top of the "clay with shale," while the light patch in the lower left corner is tip of flakes, etc., from our digging.

POSTSCRIPT, 1921.

With the aid of generous assistance granted by Colonel C. H. Darbshire, some further digging was carried out this year by Mr. A. Leslie Armstrong, Dr. R. V. Favell, Mr. Ivor E. Davies, and the writer. We extended the excavation to the north-east of "BB" on the inset plan nearly up to the stone wall, and also took out the re-entrant angle to the north-west of "BB." In the former area we found a hearth site about 6 feet in diameter, which was similar in character to the larger hearth previously described. The stones of the hearth were also similar, but set on the "clay with shale" instead of on scree. The hearth was covered by about a foot of burnt material, the whole being covered by a floor of flakes a few inches in thickness beneath the humus. I found some pot-boiler accumulations on the high moors, one of which on a branch of the streamlet Afon Maes-y-bryn at the foot of Moelfre formed a mound of some 15 by 10 yards and about 5 feet high. But these pot-boiler accumulations are of a totally different character from the hearth sites of the Graig-lwyd factory.

We obtained a considerable number of axes, and were successful in re-fitting a number of halves broken during manufacture, the two halves sometimes being found several yards apart.

"Floor D" should be added to the sketch map just south of the "G" of the word "Graig-lwyd," and "Floor E" to the east of the last letter "d." No. 123 was found in Floor D.

I have now, I think, had nearly three tons of stone axes from the site before me for detailed study, and in the foregoing paper I have endeavoured to visualize the main processes and purpose of the industry. Incidental waste occurs in large quantities at Graig-lwyd as it does at Grimes Graves, and is of similar character.

SOME EARLY BRITISH REMAINS FROM A MENDIP CAVE.

[WITH PLATES VIII—XIV.]

By L. S. PALMER, M.Sc., Ph.D.

I.—INTRODUCTION.

IN the spring of 1919 the University of Bristol Speleological Society commenced investigations in the caves on the northern slopes of the Mendip Hills. The work in various caves is still in progress.

This paper places on record the discovery of a new cave, which has been called "The Keltic Cavern," and the results which have been achieved by subsequent examinations of the cave floor.

II.—GEOLOGICAL CONSIDERATIONS.

From a general inspection of the district in the neighbourhood of Burrington Coombe, Somerset, it was realized that the cliff face on the south-west side of Mendip Lodge Hill, marked "Foxes' Holes" on Ordnance map of Somerset (Sheet XVIII, N.W.), appeared to be a position in which a cave might possibly be found. The position is marked "Swallet E" in Figs. 1 and 2. The three chief factors which led to this conclusion were:—

- (1) Swallet E is a typical active swallet, very similar to Eastwater Swallet.¹ A stream disappears at the foot of the cliff which is situated on the 600-feet contour line, whilst Langford Spring, on the northern slope of Mendip Lodge Hill, is on the 200-feet contour line and about half a mile from the swallet (Fig. 1).
- (2) The position lies at the junction of the limestone shales and the "Z" beds of massive limestone.
- (3) On both sides of the site a line of depressions is apparent which have been formed by the sinking of the surface at weak points along this junction. One of these pits has a stream flowing into it and at one place is still sinking. The present depth of this pit from the surrounding surface is about 40 feet.

A closer examination of Swallet E revealed the fact that the surface of the rock at the base of the cliff is covered in places with stalactite formation which was partly covered by a long mound of earth and stones running parallel to the cliff face

¹ *Wookey Hole* (H. E. Balch), p. 209.

(Pl. VIII, Fig. 1). It was therefore thought probable that the mound was once the roof of a cave in which the stalactite was formed, and that at some period the roof had

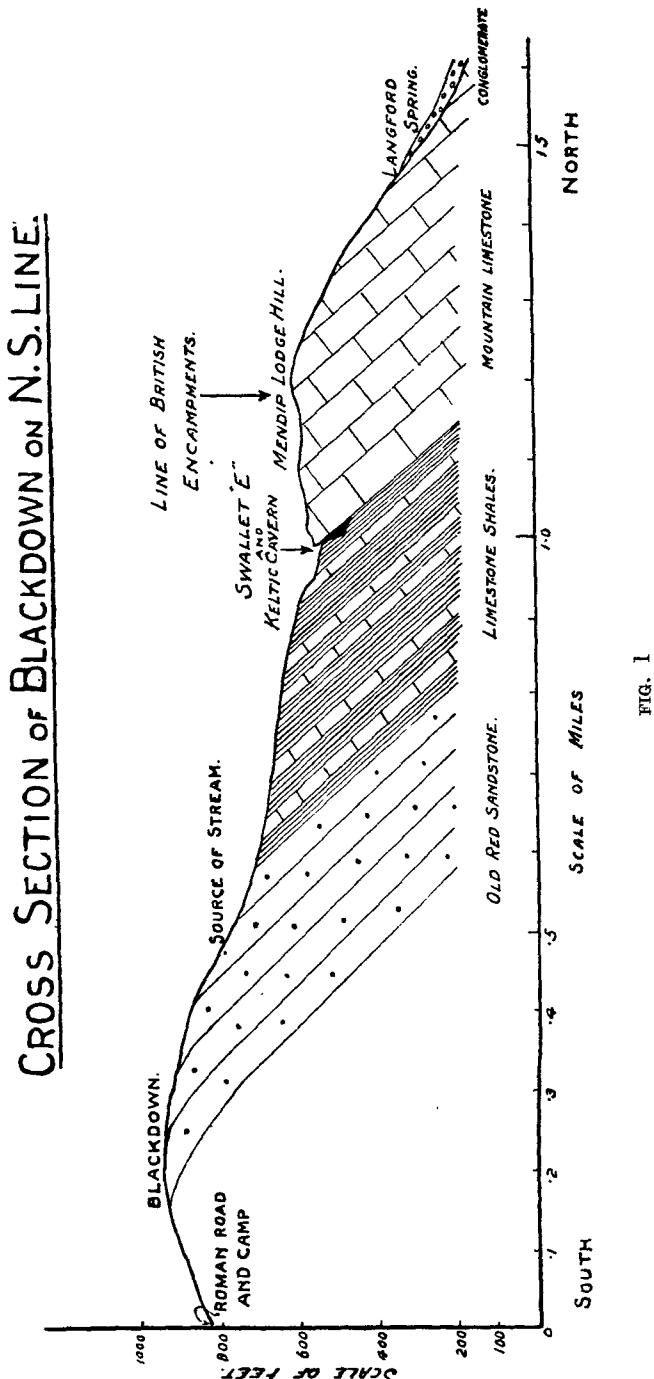


FIG. 1

fallen in and obscured the original cave entrance and also blocked the way to any further caves which might exist. The original line of roof can be seen by the

shadow cast by the overhanging ledge of rock in Pl. VIII, Fig. 1. This conclusion has since been verified, and there is some evidence which tends to show that the falling in of this roof occurred in early historical times (see pp. 204 and 210).

III.—PRELIMINARY WORK.

An attempt was first made to follow the course of the stream, but the removal of 20 tons of earth and stones only led to a deep water-worn limestone rift, which became too narrow to follow. This excavation was not entirely fruitless for it enabled the dotted line on the cross-section EE (Fig. 3) to be definitely fixed. Some red deer teeth were found about a foot below the surface.

Excavations were then commenced at the foot of the cliff above the present water level, and after the removal of only one ton of material a small hole was seen to lead into a horizontal tunnel, which when followed for 20 feet led to a steep declivity of loose stones. This was negotiated, and at about 45 feet below the surface a large cavern was reached.

A new entrance has since been excavated which leads directly to the incline and thus avoids an awkward 20 feet of tunnel. The bones of a horned sheep, similar to those subsequently discovered inside the cave, were found 15 feet below the top of the mound at the point (a) in the cross-section EE. All together about 60 tons of material have been removed in the course of opening up the cave and in making the descent comparatively safe.

IV.—THE CAVE.

The cave presents many interesting features and is formed rather by earth movements than by water action, although the waterways which pass across the main chamber at the points A and D (Fig. 3) are typical underground courses of a limestone district. The completed survey reveals the fact that the cave is one long rift chamber 175 feet in length, with an average height of 27 feet and approximately 33 feet wide at the bottom—the cross-section being triangular. Recent explorations have disclosed a vertical descent of about 60 feet leading from the cave floor at L 19 (Fig. 3) to a lower and smaller chamber in which pebbles and sand indicate a less rapid descent of the water. It has not been possible so far to progress beyond this point.

The interior contains the usual interesting examples of water action. The old swallet, from which the stream has been diverted, reveals beautiful stalactite and stalagmite formations, some of which are of the erratic type seen, for example, in Swildon's Hole, a local cave described by Baker and Balch.¹ Other examples of water action are seen in all the offshoot passages, where the water has weathered the rocks to such an extent that fossils, such as *Zaphrentis*, *Syringothyris*, *Michelinia*, *Spirifer*, etc., have been left protruding and showing their internal structure with

¹ *Netherworld of Mendip* (Baker and Balch).

greater detail than any specimen extracted with a geological hammer. Besides water action, some interesting examples of earth movements are seen in this cavern.

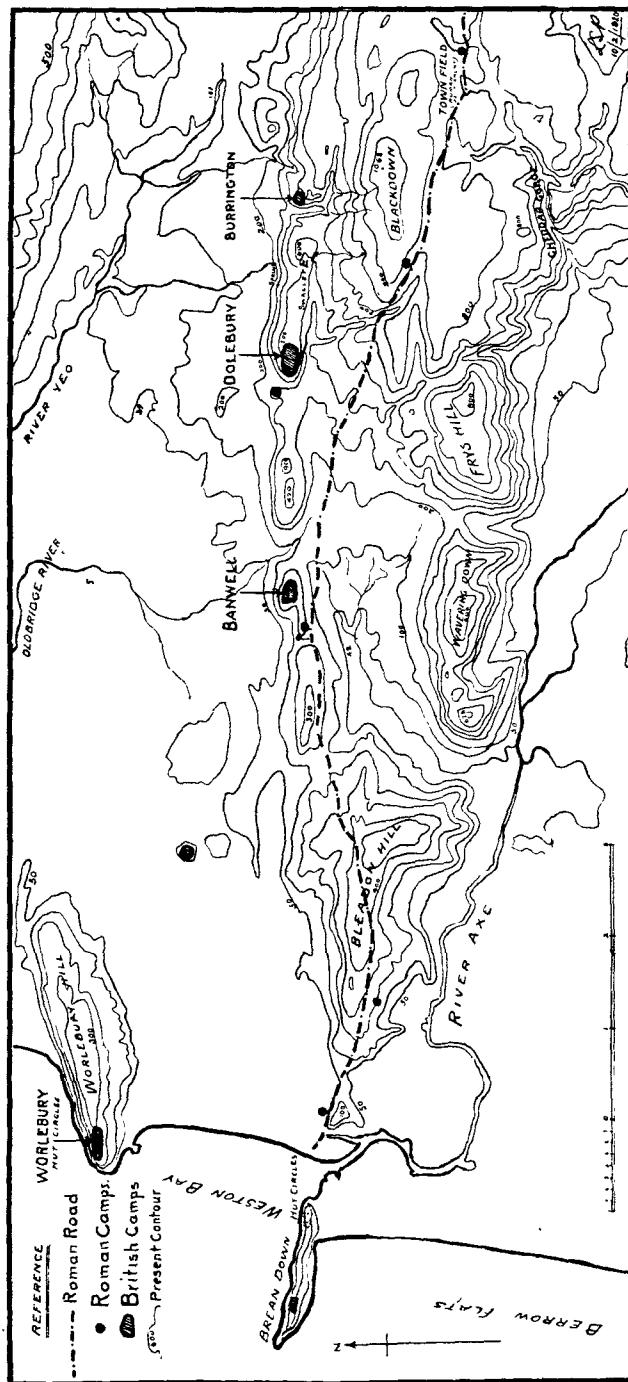


FIG. 2.—THE MENDIP HILLS.

Reference has already been made to the roof fall which destroyed an outer cave or shelter. Other interesting examples of earth movements are seen in the fold of

rock above the entrance (Pl. VIII, Fig. 1). The apex of the roof of the cave itself consists of a right-angled fold, part of which has fallen down, forming a right-angled rock, marked "K" (Fig. 3). At another part stalactites and stalagmites had joined, forming a pillar from roof to floor. The subsequent downward movement of the floor has caused the separation of the stalactites from the roof, recording in this way the motion of the underlying rock. The only other example of such an occurrence is to be seen in Swildon's Hole.

Another natural record is seen where a stalactite was formed on a rock which became tilted through an angle. The stalactite continued to grow vertically. The angle between the two portions is quite well defined, thus not only giving an exact measure of the angle through which the rock moved, but indicating by the straightness of each piece, and by the definiteness of the angle, that the rock movement must have taken place suddenly. Had this not been the case the angle would have been rounded and the new portion of stalactite would have been curved. It is quite probable that the violent action of the outer roof falling in caused the sudden movement here recorded. The length of stalactite that has been formed since the movement occurred indicates very roughly that the fall took place about 1,500 years ago. (See pp. 202 and 210.)

On first entering the cave it is of interest to note that the air in the lower portion was slightly foul, whilst the atmosphere was very dry. Both these facts tend to show the reason for the excellent preservation of the iron which was subsequently discovered. The trench dug and indicated on the plan reveals a floor of stalagmite from $\frac{1}{8}$ to 1 inch thick, covering a layer of black mud, varying in depth from 1 to 8 inches. The mud covers a stratum of cave earth intermingled with boulders, but without evidence of occupation.¹ This bottom layer is about $2\frac{1}{2}$ to 3 feet in depth. At some parts of the cave the total depth of the deposit is only a few inches.

V.—THE FINDS.

On the first day the cave was entered bones and implements were discovered lying on the surface and covered with stalagmite where the conditions for its formation were suitable. This at once indicated that man had probably occupied the cave at some time or other.

The following method was therefore devised in order to correlate subsequent work and to have a correct record of the position and depth of any material collected. A rough plan, afterwards replaced on the completion of a more exact survey (see Fig. 3), was covered with 5-foot squares. The position of each square was indicated by a letter and a number. As all the material has been found in the top layer of black mud or on the surface, no suffix has been necessary to indicate the depth of the finds. Various objects have been found below this layer, but these were resting

¹ Cf. "Wookey Hole," *Archæologia*, vol. lxii, p. 569.

at the bottom of rifts or had fallen down among the cave boulders which cover the floor. No earlier layer of occupation has been found as in the majority of similar sites.

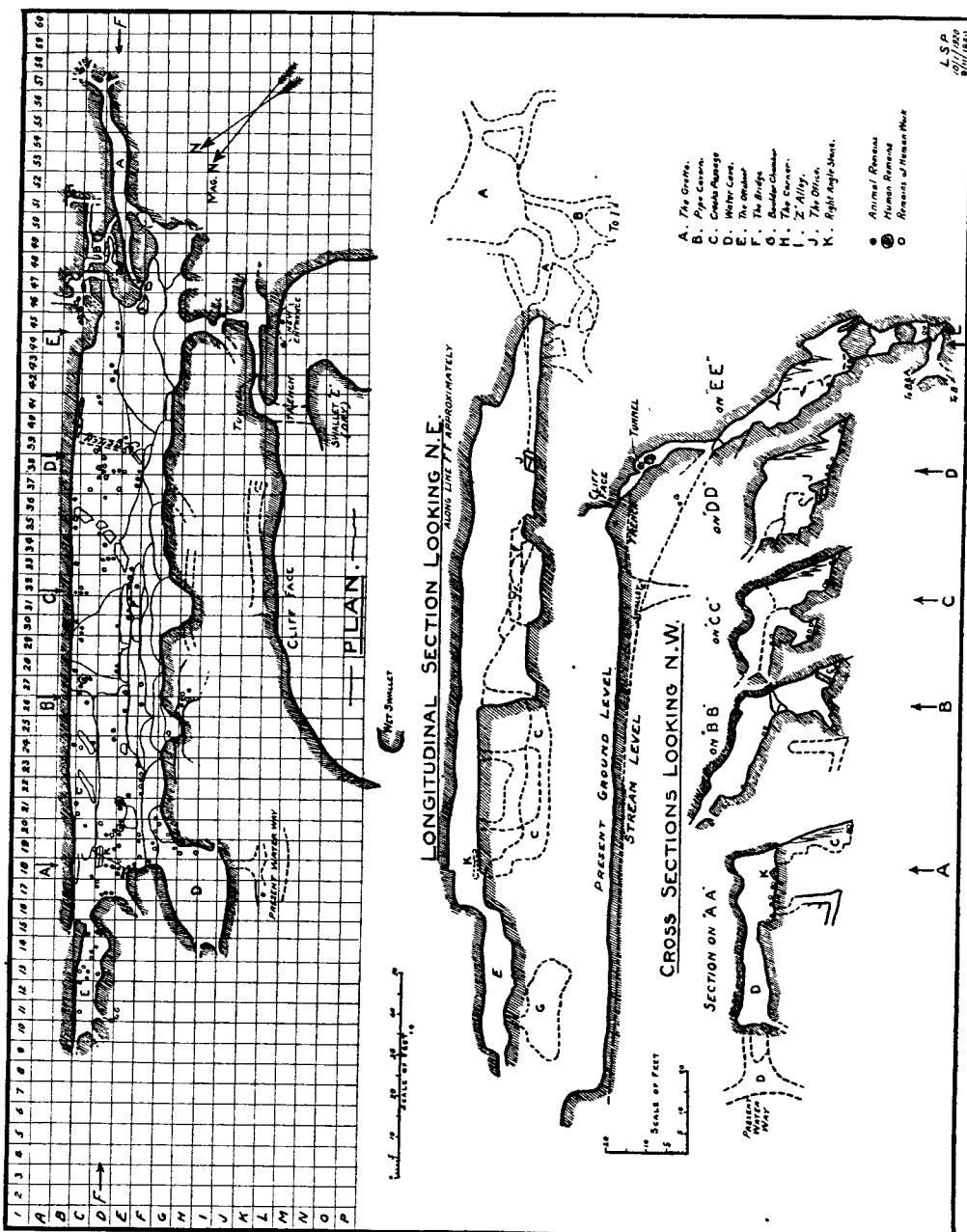


FIG. 3.

The material is conveniently discussed under the following headings:—

- (1) Human Bones.
- (2) Other Bones.
- (3) Worked Material.
- (4) Miscellaneous Finds.

The position of the finds is recorded in the plan of Fig. 3.

(1) Human Bones.—Only three human bones have been discovered, namely :—

- (i) A left radius (male).
- (ii) Portion (upper) of left scapula (female ?).
- (iii) Upper half of shaft of a left femur (male).

The radius was photographed *in situ* (Pl. VIII, Fig. 2), and was lying on the surface at E 21, covered with a coating of stalagmite about a millimetre in thickness. The bone possesses no abnormal features.

The lower portion of the blade of the scapula is missing (Pl. VIII, Fig. 3). Although found in close proximity to the radius, it does not appear to belong to the same skeleton, since it possesses female characteristics. The reference number for its position is E 20.

The femur (Pl. VIII, Fig. 4) was found in the lower portion of the cave at C 27. The pilastering noticeable from the posterior aspect is comparable with this feature on the bones discovered in the hut circles on the eastern end of Brean Down (Fig. 2). However, the prominence of the linea aspera alone is not sufficient to enable the type of man to be ascertained with any degree of certainty, but, combined with other evidence, it is probable that this feature is of considerable significance. The short length discovered prevents the detection of any abnormal curvature.

(2) Other Bones.—Bones of the following domestic animals have been discovered, the order indicating their relative numbers :—

Sheep	..	..	..	..	..	<i>Ovis aries.</i>
Pig	..	..	..	..	..	<i>Sus scrofa.</i>
Ox	..	..	..	..	..	<i>Bos longifrons (?)</i> .
Horse	..	..	..	..	..	<i>Equus caballus.</i>
Goat	..	..	..	..	..	<i>Capra hircus.</i>
Dog	..	..	..	..	..	<i>Canis familiaris.</i>

Bones of the following wild animals have also been found :—

Roe-deer	..	..	..	..	<i>Cervus capreolus.</i>
Wild boar	..	..	..	..	<i>Sus scrofa ferus.</i>
Wild cat	..	..	..	..	<i>Felis catus ferus.</i>
Field mouse	..	..	..	..	<i>Apodemus flavicollis.</i>

At C 30 a pigeon's skull was discovered.

Some of the bones had been charred and others apparently split open for marrow. One showed signs of saw-cuts and another had been gnawed, probably by a dog.

The horse bones are those of the small Keltic pony of about 11 hands.

The prevalence of sheep is in accordance with the finds at Glastonbury Lake Village,¹ whilst pig is second in this cave only. At Worlebury Camp no sheep were found,² but these animals are typical of those found at Hunsbury³ and Wookey Hole⁴ and other Late Keltic settlements. The wild animals are also comparable with those found at Glastonbury Lake Village, etc.

(3) Worked Materials.—Three stone implements have been discovered : a grinding stone, a spindle whorl, and a circular disc (Pl. X, Fig. 1). The sandstone grinder was probably used with a saddleback quern, but is unlike anything found either at Wookey Hole, Glastonbury Lake Village, Hunsbury, or Worlebury. The nearest is that numbered Q 34 on p. 609 of *Glastonbury Lake Village*; but the length of the specimen found in the Keltic cave is about half as long, being only 4·5 inches. The shape of the specimen is approximately that of a semi-ellipsoid.

A white lias spindle whorl, similar in all respects to the commonest type found at Glastonbury Lake Village, was also found.

The third stone implement (?) is a circular disc, possibly an incomplete whorl or gaming stone, although, if the latter, its size is larger than any yet found. Its diameter is 1·75 inches, comparable with that of the spindle whorl. At E 47 two pebbles are cemented in a small passage which leads to the Grotto (A, Fig. 3). Some authorities have thought that they are gaming stones. They lie close to the old waterway, in which similar though less perfect pebbles are to be found.

Of worked bone, five examples have been discovered. The most important (Pl. X, Figs. 2 and 3) are a spindle whorl made from the head of a femur of an ox, in every respect like the one found at Worlebury or Wookey Hole, or like the many from the Glastonbury and Meare Lake Villages, and three "cheek-pieces," two made from deer tine and a third from a boar's tusk. Of the first two cheek-pieces, one has two parallel holes and a third hole unfinished (Type C),⁵ whilst the other has two parallel holes only (Type B).⁵ The boar's tusk, apparently adapted as a cheek-piece, is quite unusual.

It seems improbable that the large numbers of similar objects found at Glastonbury, Ham Hill, Meare, Hunsbury, etc., should all be cheek-pieces of bridles, especially when one without holes from Meare Lake Village shows signs of having been extensively used at the point.

In the British Museum a curved needle of Roman origin is exhibited which contains three parallel holes in the broad end. Although somewhat finer than the boar's tusk "cheek-piece," it bears a very close resemblance to it, both in design and in dimensions. This suggests that some of the so-called "cheek-pieces" may

¹ *Glastonbury Lake Village* (Bulleid and Gray), p. 643.

² *Worlebury* (Dymond), p. 124.

³ *Hunsbury* (George), p. 33.

⁴ "Wookey Hole," *Archæologia*, vol. lxii, p. 590.

⁵ *Glastonbury Lake Village*, vol. ii, p. 441.

have been used in the formation of the coarse materials manufactured in the vertical looms, the existence of which is evident from the discoveries at Glastonbury Lake Village.¹ It is also possible that they were used in the making of nets. Another Bronze Age example made from a boar's tusk is described as a pin by Canon Greenwell.² The fifth example of worked bone is an implement haft of deer-horn, about 3 inches long, in which the stump of the iron implement still remains (Pl. X, Fig. 3). There is, unfortunately, not sufficient iron left to enable the nature of the implement to be determined. Another piece of bone is highly polished and shows signs of a few saw-cuts. This bone may possibly have been intended for use as a tally-stick.

Eight bronze articles and one of copper have been found, a typical Late Keltic finger ring of $2\frac{1}{4}$ turns, the half of a hollow bronze bracelet (Pl. X, Fig. 4), four nave hoops of chariot wheels (Pl. XI, Fig. 1), a ferrule $\frac{2}{3}$ -inch in diameter and $\frac{1}{2}$ -inch deep, and two other small pieces, one of which is made of copper and may possibly be a portion of a hollow bracelet of semicircular cross-section. The ring is like those depicted on page 209 of *Glastonbury Lake Village*.³ The bracelet has no counterpart in any of the local settlements, the comparable specimens having cores of Kimmeridge shale or iron. The sixth century B.C. bracelet⁴ from Halstatt is the nearest approach to the present find. The four nave hoops, of 4·9 inches internal diameter, were found lying together (as in Pl. XI, Fig. 1) in one of the lower chambers of the south-eastern end of the cave. The place was such that no chariot could have been taken there without being dismantled. Unlike other similar finds, no portions of wheels or tyre bands were found. The hoops are comparable with those from the Yorkshire burials described by Canon Greenwell.⁵ The Figure shows in one hoop a solder joint, indicating that at one time the hoops had been used and repaired. It therefore seems probable that they were removed from the hubs and placed with some pottery in a place of security.

The ferrule is a plane strip of bronze bent into a cylinder and may have been used to decorate or strengthen a spear or similar object. If the former use is correct, it is the only find that indicates the presence of weapons. The density of the bronze is about 8·7 grams per c.c., whilst that of the copper ornament is 9·1.

The objects of iron are of considerable interest. The shackles shown on Pl. XI, Fig. 2, are similar in design to those found at Bigbury.⁶ There is no other record of a similar find in England. The key depicted on Pl. XII, Fig. 1, is a good specimen, and similar to those found at Wookey Hole, Charterhouse, Ham Hill, Combe Down and

¹ *Glastonbury Lake Village*, vol. i, p. 340.

² *British Barrows* (Greenwell), p. 35, Fig. 9.

³ See also *Arch. Journal*, vol. v, p. 323.

⁴ Now in the British Museum.

⁵ Greenwell's *British Barrows*, p. 454, and *Archæologia*, vol. lx, p. 285.

⁶ Boyd Dawkins, *Arch. Journal*, lix, No. 235, p. 211.

Glastonbury,¹ etc. The article shown with it is of doubtful use. The flat end is in reality a circular disc containing an oblong hole which does not show in the photograph. Sir Martin Conway suggests that it may have been one of the handles of a tankard. This seems highly probable.

Pl. XII, Fig. 2, shows portions of a rectangular iron clamp similar to that found in a grave at Conmantre, Marne; a spike, many of which were found at Wookey, Glastonbury, etc., and a hook. The "U" shaped iron is the rim of a wooden spade, a unique find in this country. The nearest approach to it is the protecting rim of the early Scottish push plough. Jacobi's *Saalbourg* depicts two similar ones of Roman manufacture.² The *Bronze Age Guide* of the British Museum shows a somewhat similar iron hoe from Mesopotamia, dated about 1500 B.C.³ A woman's grave at Breban, Marne, yielded another specimen with square edges. A similar rim from a Scottish crannog at Lochlea is supposed to be a breast plough.⁴ From Wookey Hole a wooden shovel was obtained which showed no signs of having been shod.⁵ The width of the present specimen is 7·1 inches, its total depth being 6·4 inches. Other iron objects are a portion of blade of an adze or axe-head (2·4 inches wide), parts of a sickle-like implement, four nails, a short piece of iron, the end of which has been split longitudinally for about 1·5 inches, and a bar of iron 8 inches long and 1 inch by $\frac{1}{2}$ -inch cross-section, slightly tapering towards a rounded point.

The pottery (Pls. XIII and XIV) found in the cave is very similar to that found at Glastonbury Lake Village or below the Roman layer at Wookey Hole. Similar pottery has been found at Hunsbury, Worlebury, Ham Hill and Meare Lake Village, etc. It is also of interest to note that a specimen of this type has been dug up at Dolebury Camp.⁶ The shape, markings (Pl. XIV, Figs. 3 and 4) and nature of the material are all comparable with the ware manufactured in Armorica and brought over by the Brythonic invaders, probably about 400 B.C., and are quite distinct from the Belgic ware of Aylesford. As yet no pottery with the scroll markings or crucibles, so common at Glastonbury, have been found. One piece probably shows the dot and circle pattern, but the fragment is too small for this to be certain. No Roman or Romano-British pottery has been discovered.

The pot depicted in Pl. XIV, Fig. 1, is very similar to one found in the lowest level of the Iron Age deposits at Wookey Hole.⁷ The beauty of the design and the skill of the workmanship suggest the earliest type of Brythonic culture in England,

¹ *Glastonbury Lake Village*, p. 375.

² *Saalbourg* (Jacobi), p. 446.

³ *Bronze Age Guide* (British Museum), p. 127.

⁴ *Ancient Scottish Lake Dwellings* (Munro), Fig. 120, p. 121.

⁵ *Wookey Hole*, p. 133.

⁶ At Taunton Museum.

⁷ *Archæologia*, vol. lxiv, Nos. 5 and 8; Fig. 2, p. 342.

for after settling in this country there is evidence to show that the style of ornament considerably changed during the period 400 B.C. to Roman times.

The characteristics of this pot and the design on many of the fragments (Pl. XIV, Fig. 4, in particular), also the absence of "S" markings, which were probably developed independently in this district much later, tend to indicate an earlier rather than a later settlement. In many respects the markings closely resemble earlier Neolithic forms in the simplicity of the design, whilst the more ornate are comparable with the pottery manufactured in Armorica about this time; the technique, on the other hand, is a great improvement on that of Neolithic ware, as for example, the pottery from the lowest level of Wookey Hole or from the various barrows which have been described by Canon Greenwell (*loc. cit.*). These features are in keeping with the characteristics of the portion of bronze bracelet and copper ornament described on page 208. One large fragment of unmarked pot is of yellowish clay, and about two-thirds of an inch thick. From the size and curvature of the fragment the original bowl must have been about 18 inches in diameter.

(4) Miscellaneous Finds.—Much charcoal and remains of fires are scattered over the surface. In some places these fires are to be found under large boulders which now appear to be an integral portion of the cave floor. From the material resting upon them it is evident that a considerable fall of rock has taken place since the time of occupation (see pp. 202 and 204). One sample of charcoal which was examined was found to be charred grain, and another specimen showed traces of beans. The cooking fires appear to have been scattered throughout the cave. A microscopical examination of some blackened wood chips showed that they were oak, a tree not prevalent to-day on this part of the Mendips.

One lump of limonite and one lump of galena were discovered. The former is quite typical of the limestone shales in which the cave is formed; the latter does not appear to have been used, and is common in the district.

All the "finds" are from the surface of the cave floor or from the black mud which is the top and only layer in the cave that has yielded evidence of human occupation.

It has also been noticed that the finds have been placed, perhaps hidden, and not washed in. The presence of charcoal, the possibility of piecing together the pottery, and the position of the chariot nave hoops, amongst other evidence, all tend to support the view that the cave was occupied. It is, however, of importance that there were no definite divisions of the cave which can be said to have been stables, kitchen, or workshops, etc., as at Wookey Hole,¹ Glastonbury,² and other pre-historic settlements. This is clearly seen from the manner in which the solid and open circles are dotted over the plan in Fig. 3.

¹ *Wookey Hole*, Plate XVIII, and p. 103.

² *Glastonbury Lake Village*, pp. 269 and 303.

VI.—ASSOCIATED EVIDENCE.

It is generally accepted that some of the earliest invaders of this country were broad-headed men, who crossed from the Continent between 2000 and 1500 B.C. It was just before this time that bronze was first used in England. The Goidels followed these people about 800 B.C. Then a comparatively highly civilised people invaded our shores from the neighbourhood of Brittany. These people—the Brythons—were opposed by the amalgamated forces of the Goidel and the remnants of the earlier invaders. From some of the place-names of Ireland, Scotland and Wales, and from the existing language of some of the remoter districts, we can see how the Goidels retired before the advancing Brythons. This latter invasion took place about 400 B.C., and the invaders were probably the people who introduced iron, the industry of weaving, of soldering and other civilized arts unknown to the earlier inhabitants. In speaking of these people, Cæsar erroneously calls them all Belgæ. He speaks of one tribe, the Morini, whose name is Brythonic in origin, as using the war chariot then abandoned on the Continent.¹ Compared with the last group of pre-Roman invaders, these people were peaceful farmers rather than warriors. Somewhere between 50 B.C. and 50 A.D. came the last pre-Roman invaders—the Belgæ, and other tribes who, under Teutonic influence, were warriors rather than farmers. This invasion probably took place more or less continuously between the dates mentioned, and to a smaller degree from 150 B.C. These invaders repeated history by gradually driving the Brythons northwards. Their conquest, however, was short-lived, and they reached only the southern provinces by the time that Constantine with the Romans governed England, when all the tribes were gradually subjected to Roman influence.

The successive invaders left their imprint in Somerset. The submerged forests on the western coast yield evidence of the earliest peoples. Such names as the Axe show the presence of the Goidel, though Somerset seems to lack evidence of the habitations of the early Bronze Age and Neolithic peoples. The Brythonic invaders who came from Armorica, and the coastal districts north of the Loire, have left abundant evidence of their stay in this locality. In Wookey Hole numerous finds have been obtained which show that this was one of their dwelling places.² Glastonbury and Meare Lake Villages give even more evidence of the Brythonic origin of their peaceful inhabitants.³ Worlebury Camp was probably built either by the Goidel or by the Brython.⁴ This conclusion was derived from detailed consideration of the methods of construction in comparison with other encampments. It has been stated that this camp was occupied by the Belgæ and sacked and destroyed

¹ *Cæsar's Commentaries*, iv, 24 and 33.

² *Wookey Hole*, pp. 52, 57, 59, 79 and 137.

³ *Glastonbury Lake Village*, pp. 488, 496 and 693.

⁴ *Worlebury*, pp. 110 and 115, and *The Ancient Entrenchments and Camps of Gloucestershire* (E. J. Burrow), p. 18.

by the Romans.¹ This implies that the Belgæ must have driven out the Brythons. Figs. 1 and 2 lead to the same conclusion with regard to the builders of these camps. A very elementary tactical knowledge will show that the enemies expected by the defenders of the camps lived to the north. In every case the camp is placed on the northern and lower slope of the Mendips, and backed by the higher hills, which must have been the country of those who built the camps. Such a state of affairs could only exist if the camps had been built by invaders from the south. This confirms the conclusion of Dymond, which was based in his case upon constructional details.

That there is any connected tactical scheme in the arrangement of the numerous camps of the South West of England and South Wales has never been definitely recorded, although E. J. Burrow in his recent work on *The Ancient Entrenchments and Camps of Gloucestershire* (p. 8), has stated that “one camp after the other can be traced all along the *edge* of the hills” (the italic has been added). In Somerset the alignment of the camps is more clearly marked, since the camps are fewer in number.

On the Quantock Hills, as on the Mendip Hills, the fact that all the camps face north is very defined, the particular edge of the hill being of the utmost importance to the builders. The frontage gradually tends north-west as the line of the Severn is reached. In South Wales, on the other hand, the camps in general face south-east, are in many cases connected by entrenchments, and are directly opposed to those on the left bank of the river. We can thus see the various lines of advance of the Goidels (presumably) and of the Brythons subsequently, and how the Goidels (Silurians) in South Wales turned to oppose the advancing Brythons when the line of the Severn had been reached. From this analysis of the tactical dispositions of the encampments it is easy to see how the Brythons would readily fall victims to any enemy who might attack them from the south. This was in all probability the situation when the Belgæ were driven into England by the Roman advances on the Continent. Considering the Brythonic positions in the locality of the Keltic Cavern, we find that in the case of Worlebury there is some evidence to show that at least two battles were fought upon this site. With Glastonbury Lake Village it is quite evident that the village was sacked and the inhabitants massacred by a war-like people,² who were not, as in the case of the Swiss Lake Villages, Romans. That the finds at Glastonbury were Brythonic points to the sacking of that peaceful settlement by the Belgæ. In Wookey Hole also there is evidence that the inhabitants were driven into the fastnesses of the cave by some invader.³ Thus the three local places in which finds similar to those of the Keltic Cavern have been disclosed appear to have suffered probably between 50 B.C. and 50 A.D. at the hands

¹ *Worlebury*, pp. 111 and 115.

² *Glastonbury Lake Village*, pp. 488, 496 and 695.

³ *Wookey Hole*, pp. 38 and 128.

of an invader. In Lancashire the Dog Holes¹ have been shown to contain similar remains, and appear to have been occupied as temporary refuges by these same people, presumably in their retirement northwards.

VII.—CONCLUSION.

The evidence from the Keltic Cavern can be summarised under two heads, viz. the points which tend to give evidence of the peoples and the date of occupation, and, secondly, the points which tend to indicate the nature of the tenancy of the cave.

(1) The points which tend to give evidence of the peoples and the date of occupation are as follows :—

- (a) All the finds are comparable with Late Keltic settlements in general, and with Glastonbury Lake Village, Wookey Hole, Hunsbury, Bigbury, Dolebury and Worlebury in particular. An exception is the rim of a spade and possibly the iron article depicted with the key in Pl. XII, Fig. 1.
- (b) The absence of weapons is significant and may point, as in the case of Glastonbury, to a tribe of farmers rather than warriors.
- (c) The presence of chariots is in accordance with Cæsar's description of the people he found in the southern provinces in 55 B.C.
- (d) The cave is in what might be termed a "Brythonic front line of advance."
- (e) The presence of peoples similar to the inhabitants of this cave, yet living in adjacent marsh villages, is in accordance with the practice of the Brythons of Northern France, recorded in *Cæsar's Commentaries*.²
- (f) A large number of the names in the neighbourhood are further evidence of the Brythonic inhabitants, such as Dolebury (*Dole* = marsh or dale), Banwell (probably from *Ban* = deep) and Mendip (*Maen dippa* = stone pits), Armorica and Morini both containing the Brythonic word "mori," meaning sea.
- (g) No Samian ware, coins, or other evidence of Roman occupation has been found in the Keltic Cavern.
- (h) There is some slight evidence, especially from the style of the pottery, which points to the "finds" belonging to the earlier half of the period of Brythonic settlement in this locality.

These points lead to the conclusion that the inhabitants of the Keltic Cavern were Brythonic; their work is that described as "Late Keltic," and indicates a date from 400 B.C. to the time of their defeat by the Belgæ, somewhere between 50 B.C. and 50 A.D.

¹ *Trans. Lanc. and Cheshire Antiquarian Society*, xxx.

² *Cæsar's Commentaries*, iii, 28, and iv, 38.

(2) The evidence pointing to the nature of the tenancy may be summed up as follows :—

- (a) The depth of the layer yielding finds is, on an average, about 3 inches.
- (b) There is no evidence of a layer above this, or of previous occupation from the cave earth below.
- (c) The depth of the cave, though probably less at the time in question, is exceptionally great for the place to have been used as a habitation for any length of time.
- (d) Finds which might have been expected, but which have not yet been discovered, are almost as interesting as those found ; *i.e.*, a spindle whorl has been found but no weaving combs or loom weights, a grinding stone without a quern, nave hoops without wheel tyres, and no horse harness, no currency bars, no weapons, and only three human bones.
- (e) The articles were placed, possibly hidden, and not washed in.
- (f) There are no signs of industry in the cave itself.
- (g) There are no definitely established places in the cave from which groups of similar finds might have been expected.

Before interpreting these facts the possibility of applying one of the usual explanations of groups of finds must first be considered. Such explanations are generally one of the following :—

- (1) A hoard of either personal belongings, merchants' stores or founders' implements.
- (2) A settlement.
- (3) A battlefield.
- (4) A cemetery.

From the considerations mentioned above, it does not seem probable that either of these explanations will fit this particular case. It is therefore reasonable to suppose that this cave was a temporary refuge, and possibly occupied during the earlier period of settlement in this district. Hence it is concluded that :—

- (1) The finds from the Keltic Cavern were the work of the Brythons, and are "Late Keltic" in style.
- (2) The cave was used as a temporary refuge by the Brythons.

Prof. E. Fawcett and M. A. Hinton, Esq., kindly assisted in the identification of the bones.



FIG. 1.



FIG. 2.



FIG. 3.



FIG. 4.

SOME EARLY BRITISH REMAINS FROM A MENDIP CAVE.



SOME EARLY BRITISH REMAINS FROM A MENDIP CAVE.

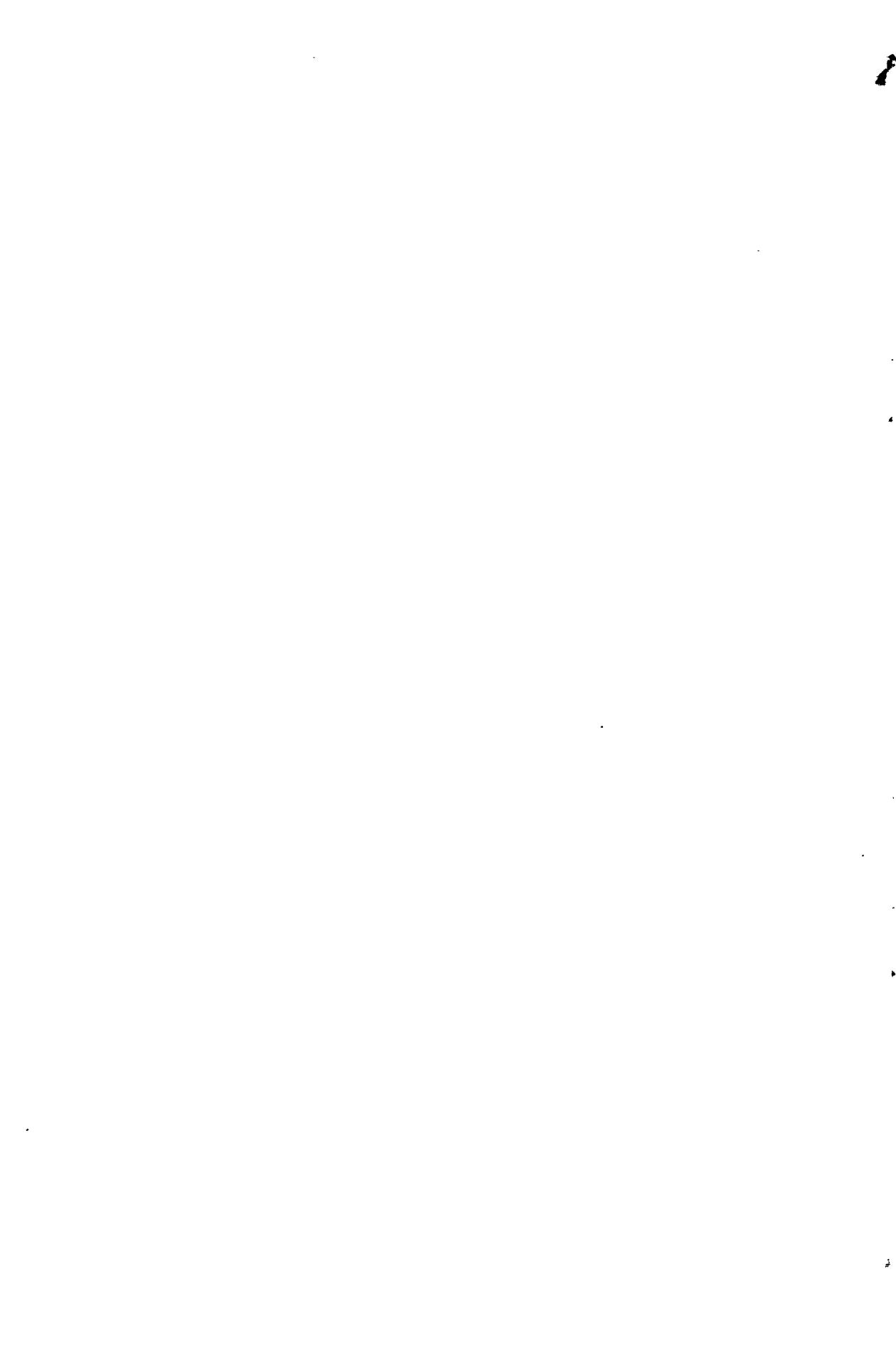




FIG. 1.



FIG. 2.

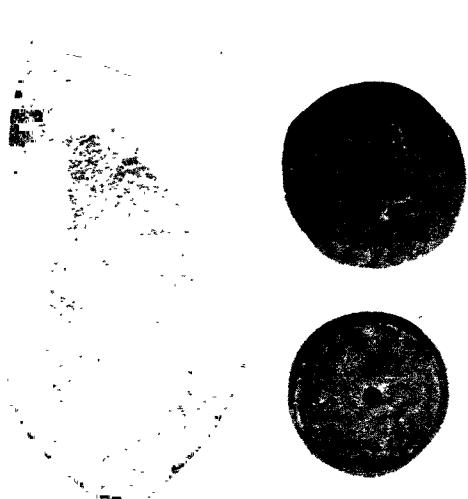


FIG. 3.



FIG. 4.

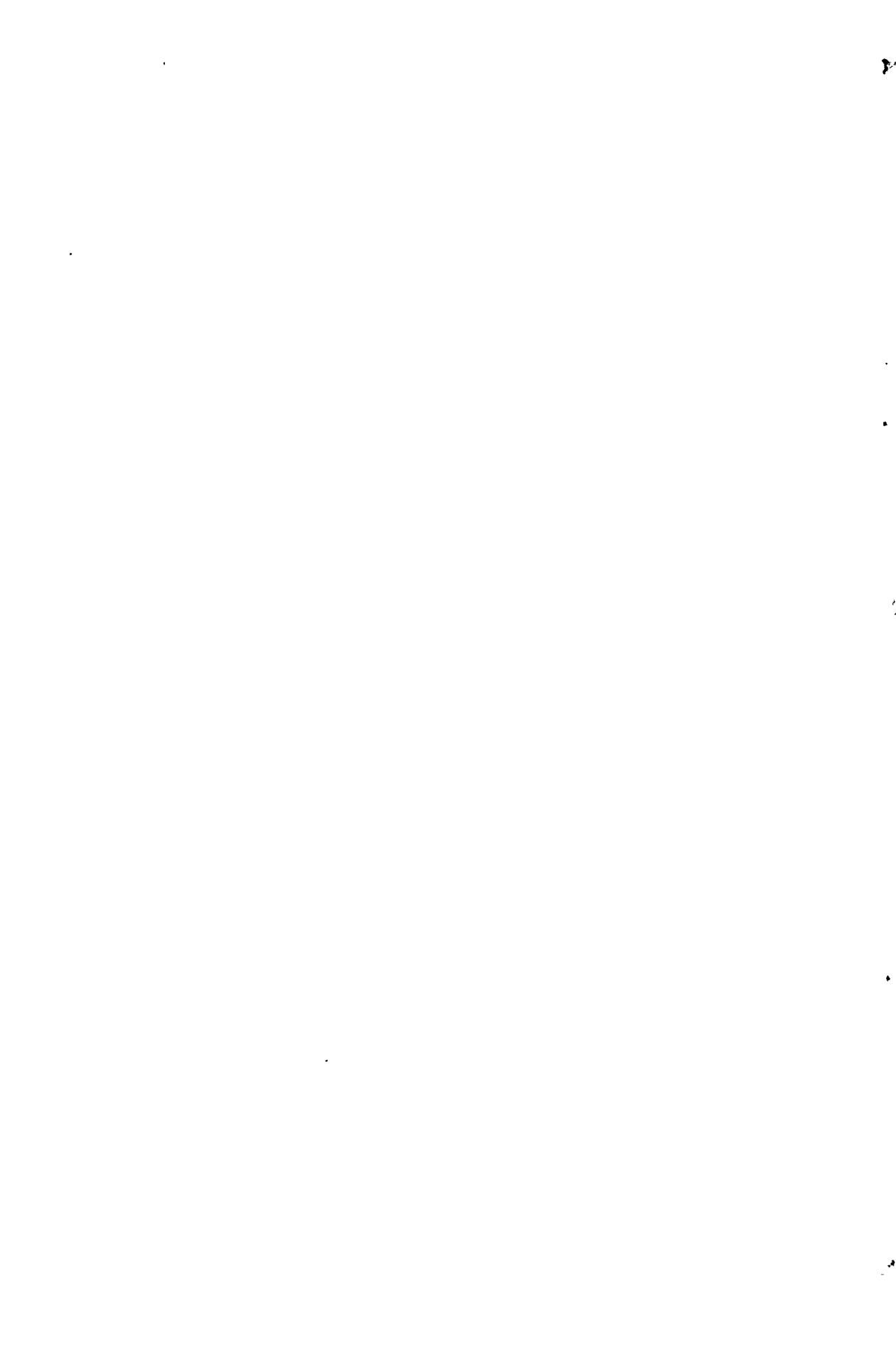


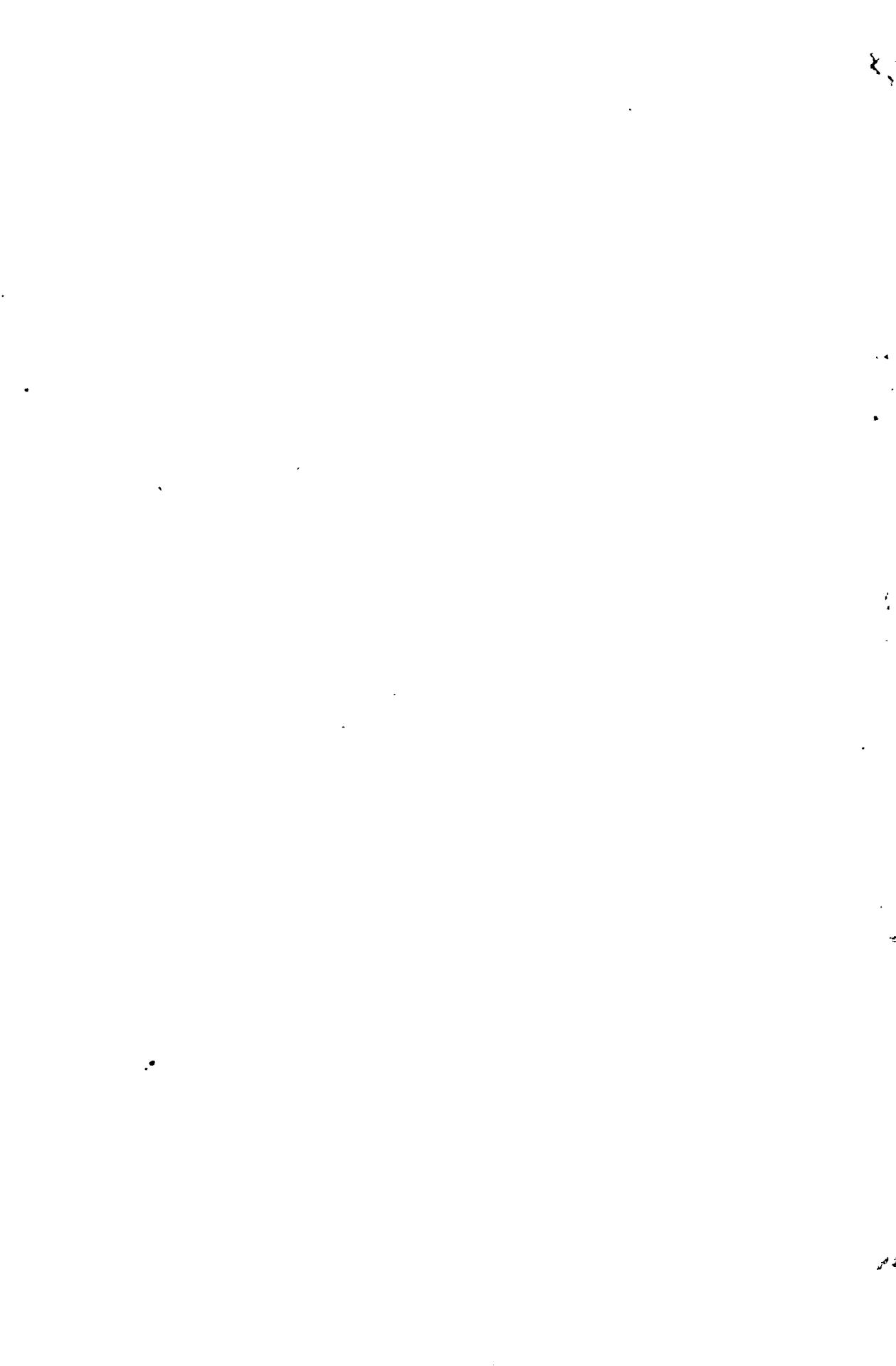


FIG. 1.



FIG. 2.

SOME EARLY BRITISH REMAINS FROM A MENDIP CAVE.



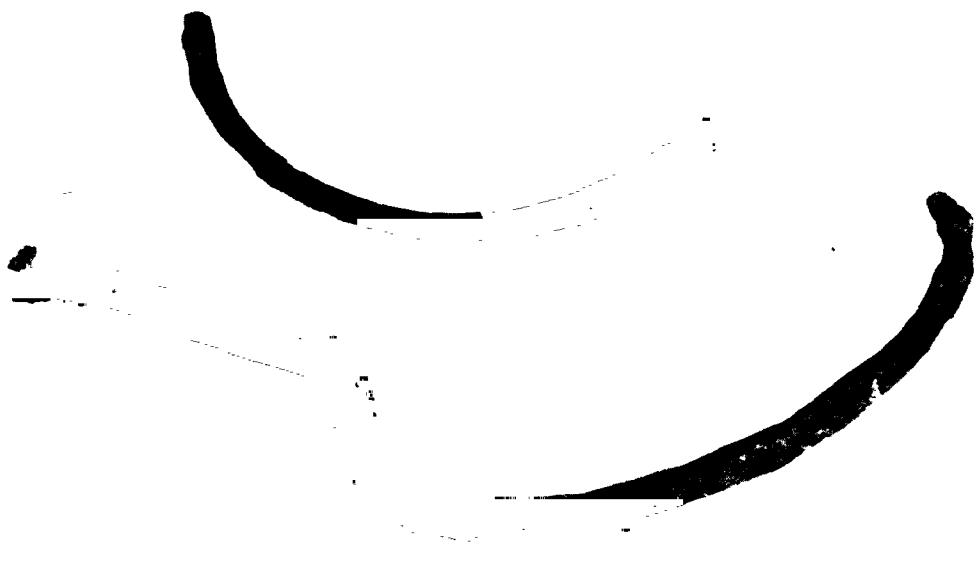


FIG. 1.

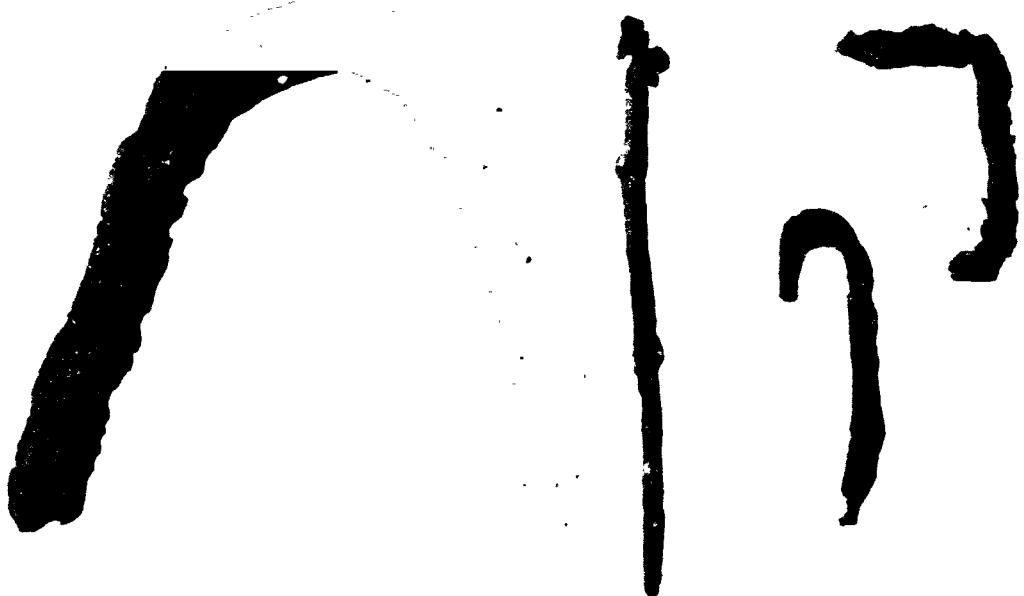


FIG. 2.

SOME EARLY BRITISH REMAINS FROM A MENDIP CAVE.

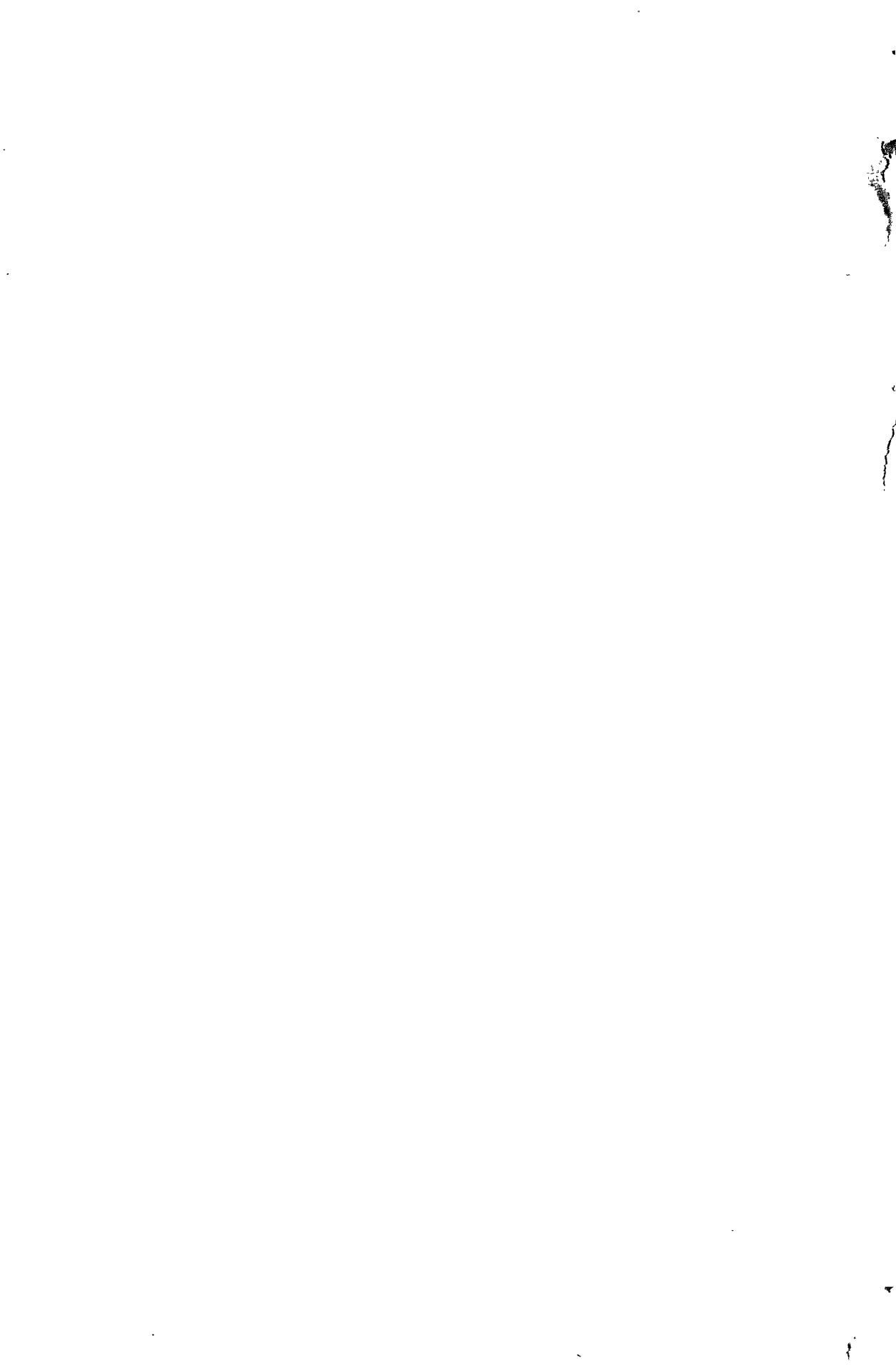


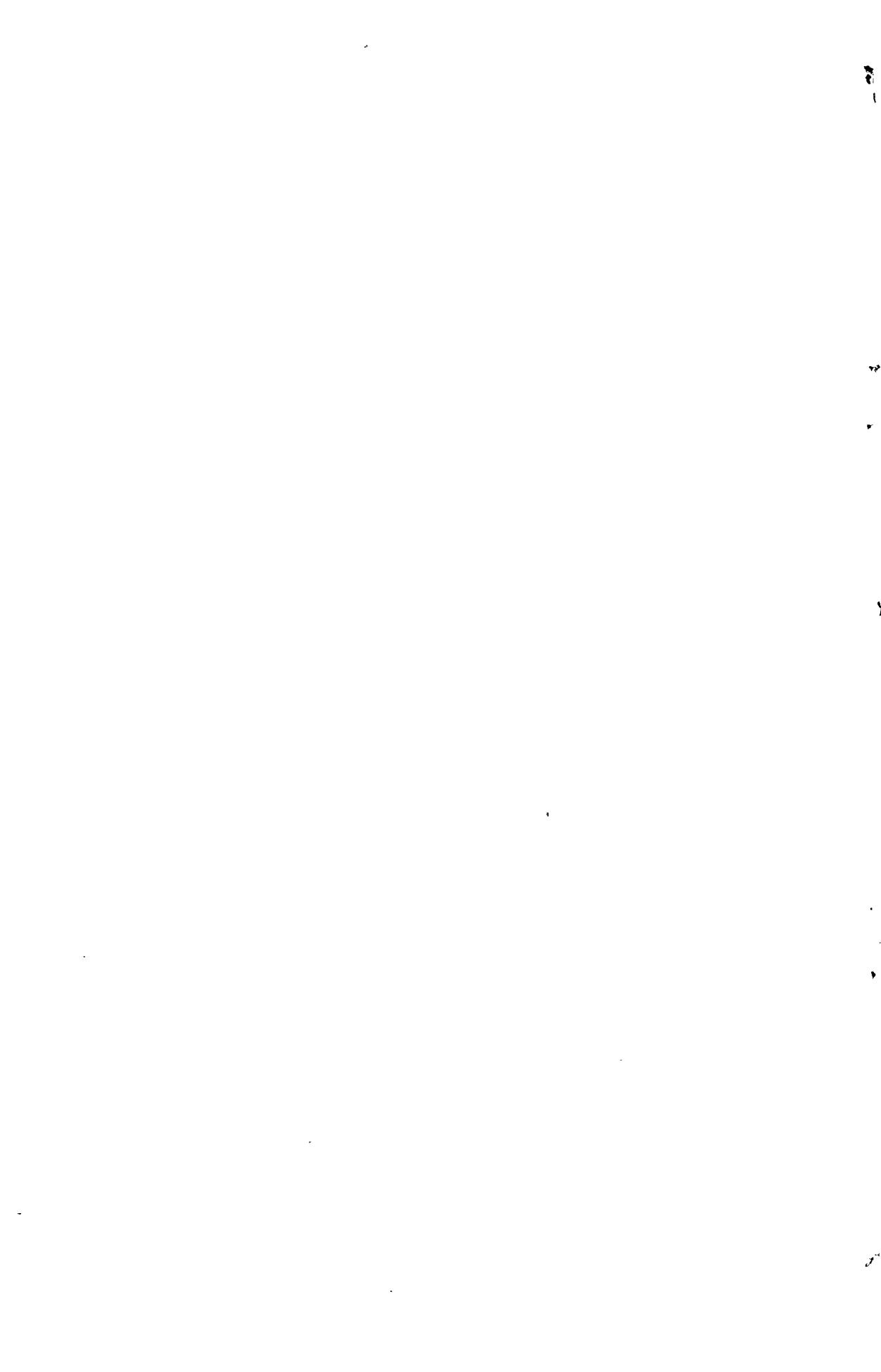


FIG. 2.



FIG. 1.

SOME EARLY BRITISH REMAINS FROM A MENDIP CAVE.



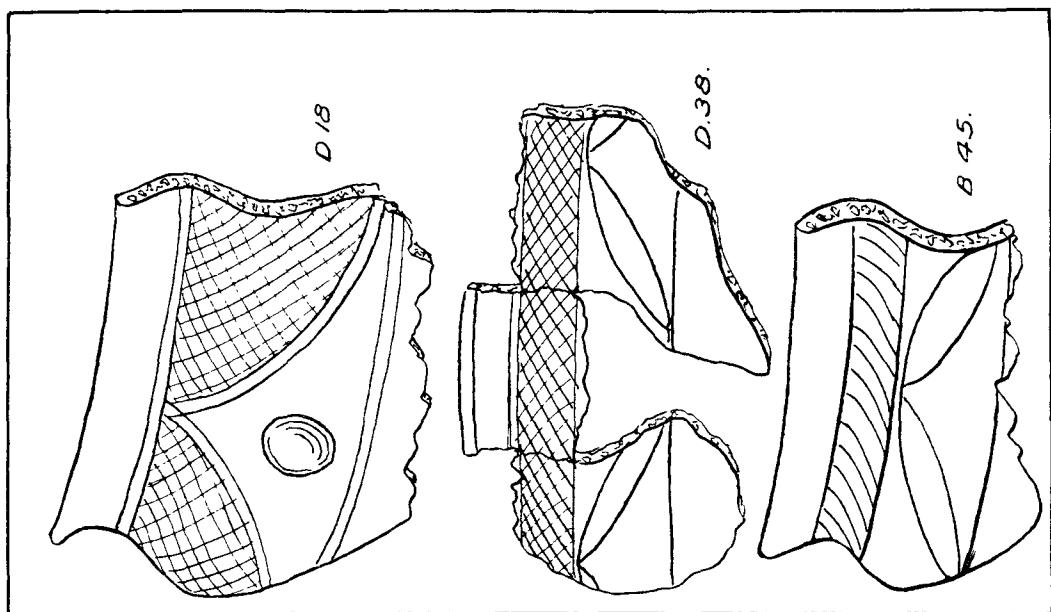


FIG. 4.

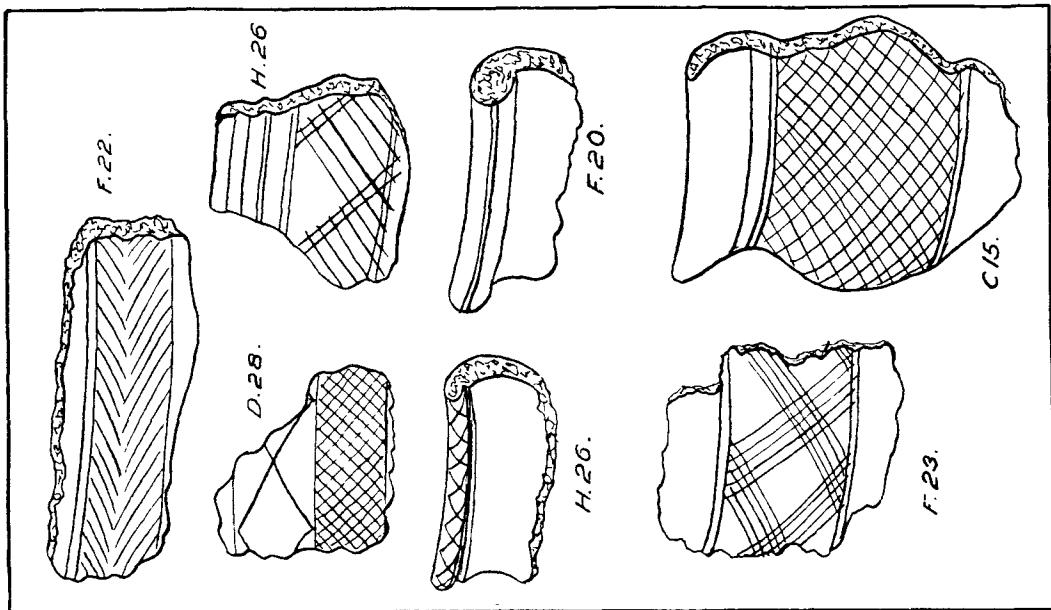


FIG. 3.

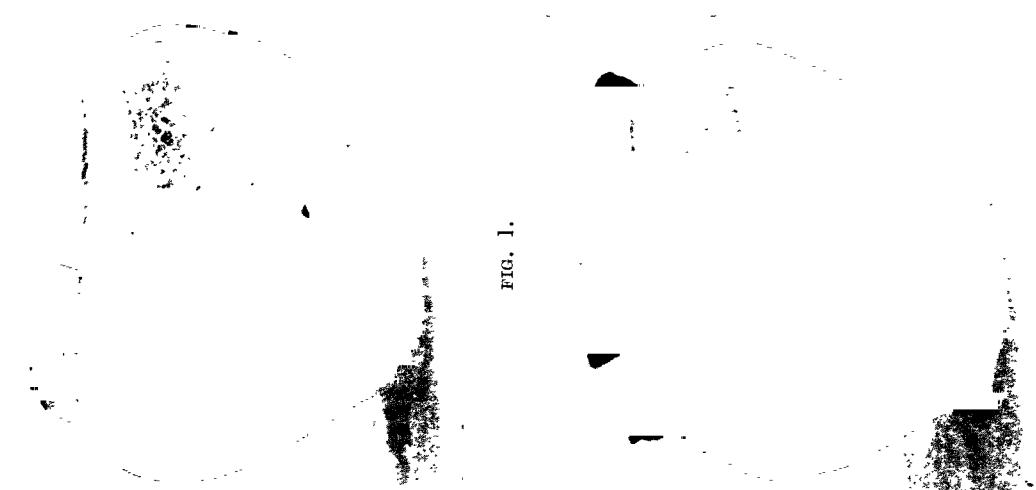


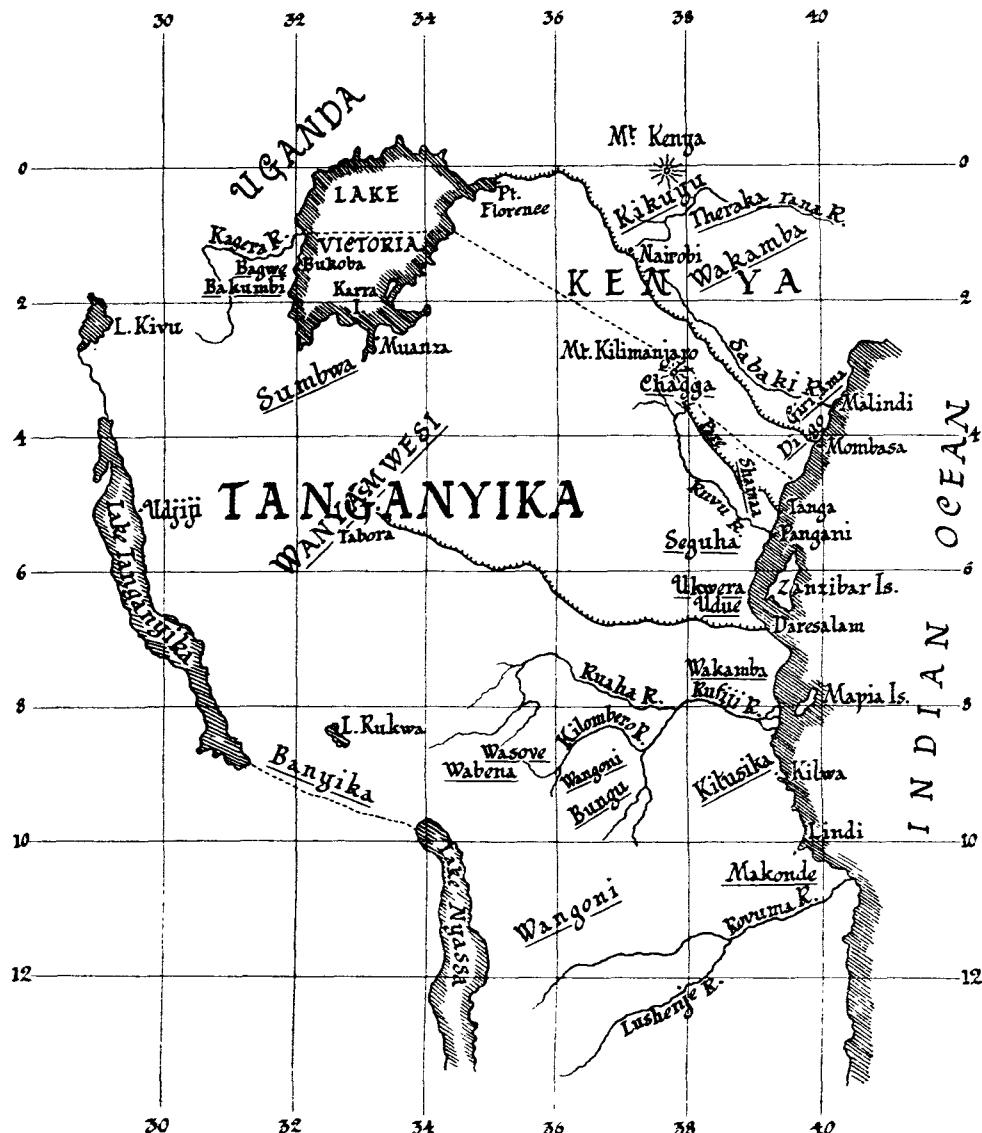
FIG. 1.

FIG. 2.

Prof. Sir Wm. Boyd Dawkins, R. A. Smith, Esq., H. E. Balch, Esq., H. St. George Gray, Esq., by their practical interest in the discovery, greatly facilitated the identification of the worked materials.

The University of Bristol Speleological Society is responsible for the execution of the work, for the photography, and for permission to use the photographs illustrating this paper.

A portion of the working expenses were met by a grant from the University of Bristol Colston Research Fund.



SKETCH MAP TO ILLUSTRATE DISTRIBUTION OF BANTU TRIBES IN EAST AFRICA.

NATIVE LAWS OF SOME BANTU TRIBES OF EAST AFRICA.

By the Hon. CHARLES DUNDAS.

INTRODUCTION.

FOR some years I have given particular attention to the study of the laws and organization of certain Bantu tribes among which I have lived in East Africa. These tribes are :—The Wakamba, Wakikuyu, Watheraka, and Wadigo in Kenya Colony, and the Wazeguha, Wapare, and Wachagga in the Tanganyika Territory (formerly German East Africa). In all these tribes I observed a similarity in their conceptions of law and practice which suggested to me that certain principles might be common to all Bantu of these countries. I was fortunate enough to find in German East Africa a number of German writings concerning other tribes of which I have little or no personal acquaintance, and in these also I found a great deal of information which coincided with my own observations. A summary of such information combined with my own observations is contained in the following.

In so far as a great deal that will be related here is gleaned from other sources, I cannot entirely answer for its accuracy, but there are indications that if the study had been pursued by one person in all the tribes mentioned, a greater degree of agreement in the main principles of their laws would have become apparent. The various points discussed have, moreover, not been equally exhaustively investigated, and in particular due consideration has not always been given to present-day and original practices which are by no means invariably identical.

I am thus well aware that the whole falls far short of being a reliable and complete study. My plea for publishing it despite these shortcomings is that, so far as I am aware, very little of the like has been compiled on a subject which I cannot but think has not only its ethnological value, but is of the utmost consequence both to the ruling and the subject races who are mutually concerned in the great problems that Africa presents in regard to its future advancement. We cannot ignore the principles and institutions whereunder these millions of Africans have lived generation upon generation, and which are still in vogue whether officially recognized or not. And that which we cannot ignore, we cannot afford to be ignorant of. The whole subject must sooner or later be carefully studied—the sooner the better—while yet we have the opportunity. My aim is, then, to record such information as I have in preparation and as an outline which may be useful to those who can adequately give their attention to it, and in the meantime these pages may serve as a guide to others

whose daily occupation calls for an understanding of native law and who have had less opportunity to acquire a knowledge of it.

JUDICIAL AUTHORITIES.

Among primitive people and in disordered times political upheavals were as frequent as their causes were many. A tribe or collection of tribes might be united under the rule of a prominent man, or times of stress would knit them together in common defence, or a ruler might be imposed upon them by an invader. Conversely, stable rule collapsed through internal dissension or gradual decline resulting from prolonged security. The latter tendency is observable in many parts since the establishment of European rule. As an example of such events, the Shambaa tribe may be quoted. About 150 years ago a man of the Kilindi tribe gained renown chiefly by his skill in exterminating the wild pig which devastated the fields of the Washambaa, and was eventually invited to rule the tribe. In course of time the kingdom of Vuga was established, being named after Vuga the capital, or king's residence, and this kingdom extended from North Pare to Tanga, Pangani, and Uziguha. When Rebmann landed at Pangani in 1848, the chief of that town was a vassal of the King of Vuga, who commanded him to receive the traveller. To-day the Wakilindi form the aristocracy of Usambara, and most, if not all, of the petty headmen are Wakilindi. But in course of time the royal family was divided, a separate ruler of Masinde broke from the Vuga family, and the powerful and well-organized state created by the Wakilindi declined until, at the present day, the Washambaa are divided into such a number of petty headmanships that they bear the appearance of a tribe which has never attained any real unity. Elsewhere chiefs have been created where they never existed before : thus among the Wakikuyu ; in other parts the chiefs, backed by the invincible power of European government, have become more powerful than before : so the Chagga chiefs. In general it may be said that where chieftship was not known or hardly existed, it has developed under European rule, and where it was most firm and absolute it has declined.

Everywhere the political sovereign was the supreme judge, whether that dignity was represented by an individual or a council. And for this reason the native will always regard the European judge or magistrate as his immediate ruler, wherefore a distinction between judicial and political officials dealing directly with the people in Africa is never to be recommended. The effectiveness and supremacy of the law depends mainly on the stability of the tribal organization : it is most lax among the disorganized tribes, and most telling among those who are united under individual and powerful rulers. Therefore, it is necessary to consider jointly the political organization and the judicial system of each tribe.

It is hard to apply European terms to Africa, but to borrow the nearest equivalents we may distinguish between democratic and monarchical tribes, though

it is not to be assumed that in each case the latter are subject to one individual ruler.

I. Of the tribes here discussed the following may be described as entirely democratic. The Wamakonde, Wakarra, Wagiriama, Wakamba, Wakikuyu and Watheraka. The first of these tribes affords a striking example of a people without chiefs in so far as this affects its civil laws. Here the embryo of state is to be sought in the clan ; but clans rarely boast of a specific head, and its representative bears rather the burden of constantly standing by or standing good for the clan members without any material advantage to himself ; the community in this case is founded on mutual relationship, and not on executive authority, and by consequence there is no actual judiciary within the entire tribe. In matters between clansmen it will not be difficult to achieve a settlement, and moreover disputes will be rare. The method of exacting redress in cases of homicide will be related elsewhere, but the following is a description of the normal procedure in ordinary cases : “ In the first instance the *Mkonde* will endeavour to obtain redress unaided by his relatives and friends. If he fails to come to an agreement he will have recourse to a solicitor, who may be of any clan, and is selected for his eloquence and ability. Having received an advance or promise of payment, the solicitor approaches the defendant, whom he plies with arguments and threats. If he proves obdurate and unwilling, the claimant will appeal to the senior members of his family, an elder brother, uncle, or the head of his clan according to the importance of the matter. These endeavour to arbitrate. If such efforts are fruitless, a new solicitor is engaged who goes to the defendant’s family and clan, to whom he represents the true aspects of the case. The defendants on their side put up a pleader, and the two solicitors now wrangle over the case for days together, supported by their respective parties. The plaintiff’s solicitor resorts to all manner of objective and historical arguments, which he combines with persuasion and threats, and if these fail he will speak of the standing of his client, his numerous and wealthy kinship, intimating the consequent disadvantages of opposing him. If all this is of no avail, open hostility is threatened and finally carried into practice. By force or cunning, slaves and members of the opposing family are kidnapped to extort payment. This final phase may be reached for any cause from the murder of a brother to the loss of a knife.” Here, then, the means of redress was persuasion or force, but hardly judicial decision.

The Wakarra submit their disputes to decision by their elders, but enforcement of their judgment is left to the plaintiff himself.

The Wagiriama are another tribe whose sole heads are the seniors of their clans ; the present headmen are purely Government creations and were never really recognized by the people. If a matter cannot be settled locally, the elders meet to decide it. A writer,¹ speaking of the Girama Laws of Procedure, says : “ The judgments are often ignored, the defeated party going elsewhere to try his luck before

¹ Mr. A. M. Champion.

another *Kambi* (council). I had a case a short time ago on which the elders had given judgment no less than ten times. Again, if a judgment is given against a man by his own *Kambi*, it is perfectly open to him to leave his village and go off elsewhere without paying . . ." I am not well acquainted with the Giriama tribe, but they are so nearly akin to the Wakamba in their customs that I suspect their ideas in this matter to be more or less identical with those of the Wakamba, Kikuyu, and Theraka. The only original and real authorities among these tribes are the elders, whose decisions in political and judicial matters carry weight according as the matter is one of general interest, and the meetings by consequence largely attended or not. Elsewhere it will be related how the elders could go to the extent of passing a death sentence, but, as will be explained, this was more a measure of self-defence than a judicial act. As the spiritual heads of the people they might also resort to such means as cursing the defaulter, but the effectiveness thereof depended on the superstitious fears of the culprit. The elders are not necessarily old men, in fact those of advanced age retire from the ordinary judicial duties¹; but with few exceptions they are men of mature years who have been admitted to the degree of "Elders of the Council." It is interesting to note that for years we vainly endeavoured to create and establish so-called chiefs or headmen, but with the smallest success, because the people simply failed to comprehend the position and functions of such an authority. Meanwhile the elders continued to exercise their influence and office as judges. The councils formed by them, called *Nzama* in Ukamba, *Kiama* in Kikuyu, and *Chama* in Theraka, were ultimately officially recognized and formed into regular tribunals with legal jurisdiction within defined areas for each settlement. Their present form is, of course, a Europeanized adaptation of the original institution, which was not nearly so definite. Formerly, if a man did not take his due by force, or could not come to terms with his opponent, he would demand that they should call a council, and if they agreed upon this course each party would summon his own elders; to this day they speak of "making" a *Kiama*, and while we speak of the proceedings as a "trial," they describe them as a consultation (*Kochira, Kosila* = to consult). Now supposing the council to have met and decided the case, the losing party might, and frequently does, decline to abide by the decision. Asked what then happens, the elders will say that formerly they told the successful party to take his due by force, and if the matter interested them sufficiently, the elders might endeavour to intervene to avert fighting; but more often the contending parties fought, and hence the incessant feuds in the old days. Under present conditions, the elders tell the claimant to "go to the Government," but they will rarely trouble to make complaint of the defendant's disobedience. Not infrequently the claimant left it to the issue of some ordeal or had recourse to witchcraft.

Thus it is apparent that the Council of Elders had to all intents and purposes no

¹ In Ukamba the elders retire singly as they grow too old to be active, but in Kikuyu, where the men are divided into generations, a whole generation retires in a body.

powers of decision. The defendant himself summons the council, and by so doing declares his willingness to submit the matter to discussion, but it will invariably be found that in such case he admits some liability, and this explains why it is that a *Mkamba* is so reluctant to appear before a court to answer a charge which he entirely refutes: his mere appearance is, in their view, an admission in some degree. Next, the losing party abides by the decision or not as he pleases. On the whole, then, the assembly of elders was more in the nature of a court of arbitration than of decision.

Less independent, but still in the same category as the tribes so far discussed, are the *Wadigo*, *Wapare*, and *Wazigua*.

Among the first of these tribes, the *Wadigo*, the government is composed of the headman, called *Zumbe*, the elders, and a functionary called *Mwananjirra*, who is a sort of messenger or constable. The elders or adult men are divided into ten grades, which are attained by gradual admission, and of these the three senior grades constitute a council or *Ngambe* (*Giriama Kambi*). These elders conduct the trial and explain the facts to the *Zumbe*, who mainly on their advice gives the decision. But for the enforcement of such decisions there was only the course of assisting the successful party to seize the defendant's goods; in particularly flagrant cases the offender was punished by the ban of fire and water until he submitted.

The same word *Zumbe* for a chief is the term in use among the *Wazigua*, who have a large number of petty headmen. The office is inherited from father to son; the privileges of the *Zumbe* are free labour for the cultivation of his fields, otherwise the position is little distinguished. As judge, the *Zumbe* is assisted by the elders, and his decisions are based on their advice. For many years the *Wazigua* have been much under Arab influence, and latterly the *Zumbes* have been replaced by native magistrates, so that it is difficult to arrive at the original form of their jurisdiction.

A definite aristocratic class is not uncommon among African tribes. In *Upare* the village headmen (*Valao*) and the chiefs (*Vafumuwa*) are always of this class. The position and powers of the chief are rather just what he can make them: he is not distinguished in dress nor by any peculiar marks of respect, but he has the privilege of calling on his people to work for him, and criminals may claim the right of asylum with him (see under *Murder*). The real power of the land lies with the elders, who are consulted in all matters. His judicial power the chief shares with the elders, called *Vagosia Kaa*, the *Valao*, and other men distinguished by their intelligence and eloquence. But the council thus formed is little respected by the more powerful individuals, and it is said that in former times it was frequently overawed by the number of armed followers brought by each party, and the proceedings often ended with a free fight in which the chief himself might not be spared. In general the claimant took the law into his own hands, at any rate in all serious cases such as homicide, stock thieving or other thefts—in fact, petty warfare ensued. At the present day the chief's judicial authority is supported by the Government, but it is

clear that here also in former times cases were effectively decided by the chief and elders only by voluntary agreement of the parties.

I now come to a tribe which is in some ways remarkable for its organization. The Wachagga are a mixture of the most diverse sections of tribes, principally the Wakamba, Wapare, Washambaa, Wataita, and probably an aboriginal tribe of Kilimanjaro. The mountain was gradually peopled by these immigrants, who settled each in their own ridge, and clan by clan each with its distinct head. Among the latter, the head of the clan which first colonized there took the lead and in due time became the recognized chief. Actual chiefship seems to have been founded not more than 120 years ago, but many local conditions which it would be too lengthy to go into contributed to make this institution very stable, though naturally from time to time lesser chiefs were conquered and their domains incorporated in the victor's lands temporarily or permanently, others became vassals of the most powerful chiefs, and others again have in course of time broken up into petty headmanships. The more powerful chiefs attained very considerable despotic authority, which was aped by the smaller chiefs. This stage of development was reached not long before European rule was established, and since then the chief's position and powers were not only confirmed, but in some degree increased, so that the Chagga tribe would not properly be classed among the democratic tribes were it not that the original features of the tribal institutions have survived and are much in evidence. While the chief was all powerful and arrogated certain privileges such as free labour, contributions and rights over life and death, property and persons, he remains at bottom the principal clan head. In his judicial capacity the chief is assisted by a council of persons called *Njamá*, who, though not necessarily elders, are in the majority elderly men and in particular seniors of the clans. In practice we have here the same institution as the *Kiama* of the Wakikuyu and the *Nzama* of the Wakamba—even the name is almost identical—in short, the jurisdiction of the elders.

Among the Wachagga also it is the common practice to this day for the claimant to seize whatever he claims from the defendant. Whether the chief steps in to avert bloodshed or merely to uphold his own authority depends on the character of each one, and the nature of the case, but no chief regards such action in the light of an obligation.

II. The numerous petty chiefs of the Washambaa have now little or no power, having been superseded by native magistrates appointed under the German regime. To learn the original organization of this tribe, it would be necessary to go very far back, before the time of the Vuga kings. It is probable that the small chiefs pretended to the same powers as the king held in his time, but the tribe is so akin to its neighbours the Wazigua that I surmise their institutions were much alike. The chief's judicial court was composed of assessors called *Watawa* and other officials who conducted the case, while the decision was pronounced by the chief alone. Notwithstanding the political and judicial power of the chief, a claimant would often obtain permission from some sub-chief to seek his own remedy by force.

Among the Bakumbi an aristocracy by birth is recognized, and as a rule the village headmen (*Mwanangwa*) belong to this class. The latter are subject to the chief, whose insignia is a round shell worn on the arm. His privileges consist in free labour and a contribution of one basket of millet from each harvest ; he has no uncontrolled power over the lives, property or wives of his people. The successor to the chief is elected by a council of persons called *Banangoma*, and the same council assist the chief in all matters and act as assessors in the trial of cases. Minor disputes may be decided by the village headman, but whether the trial comes before him or the chief, the decision is determined by the assessors or only pronounced by the presiding headman or chief. The creditor or prosecutor may, however, take the law into his own hands. The decision of the chief is enforced by the simple method of devastating the offender's property.

More paramount is the position of the chief or king in Ungoni. He exercised powers of life and death and to a certain extent had a right to his subjects' wives, in that he could dissolve any marriage and appropriate the woman thus divorced. Yet he was distinguished only by the greeting accorded to him ; his only source of wealth was the booty brought to him by his warlike people. Formerly the dead chief was buried with a slave and a store of ivory. Succession to the chiefship was in the same order as that of inheritance of property, *e.g.* son, brother, or nephew in order. The villages are controlled by headmen who are subject to the chief and constitute the chief's council. Judgment is delivered by the chief with the acclamation of his councillors. The decision is rarely enforced, but if the losing party defied the chief he was formerly killed or enslaved. Under all circumstances, however, the claimant had full right to seize what he laid claim to of the defendant's property.

The Wabungu call their chief *Inkozi*. He decides all disputes and apparently without assistants. I am not informed as to whether he enforces his decrees or how, but the right is accorded to the claimant to redress his wrongs by seizure.

The Sumbwa and Mnyamwezi have village headmen ; over these are heads of districts. Among the former this position may be bought from the chief, but they are generally members of the chief's family ; among the latter the nobility are members of the chief's family and those who govern districts (*Vasalive*). The Wasove people are divided into five classes of which the first two are the issue of male and female members of the chief's family respectively ; the third are the headmen or *Wanzagila* ; the two last are the peasants and strangers. Here also there are village headmen, though the community of the clan is a more stable association than that of the village. Over all these stands the chief ; the Msove chief wears no insignia, but is greeted with a particular formula. In Sumbwa the chief wears a round shell in the hair,¹ an armband of lion's sinew, and two copper armrings. In Unyamwezi

¹ But if he has no issue several three-cornered shells are worn round the neck.

the chief wears a strip of lion skin bearing four round shells and worn on the head, neck and arms, also an elephant tail attached to the head. It is curious that in this tribe the women curtsy to the chief, an action I have not observed among any other natives.

In Sumbwa the successor to the chief is elected by the favourites from among the chief's sons; in Unyamwezi, succession goes by election of a member of the ruling family, but not necessarily of a son; and among the Wasove, succession goes to a cousin or next to a son-in-law. The privileges of the chief are: In Sumbwa tribute of five hoes or one goat, one basket of honey, a measure of grain and cultivation of a field in each district; in Unyamwezi a payment of a small tax, and free labour. If burial rite may be regarded as a form of privilege, it is to be noted that the burial of the Mnyamwezi chief was very ceremonial, including the burying alive of a slave woman.¹ Among the Wasove, the chief's subjects have to work for him, excepting the smiths, who pay a tribute in hoes in lieu of work.

Among the Wasove and Wasumbwa, the claimant has the right to seize the defendant's property; in the latter tribe, however, only if he is unable to pay. In Unyamwezi, it is said that no such right is accorded. The supreme judge is the chief, who is assisted by councillors. Unlike many other tribes, this council is selected by the chief, and does not exist by right. It is said that in Sumbwa, the chief's power is greatly limited by the councillors, and that he always acts on their advice. In Usumbwa the decision of the chief must be enforced by the claimant, but if the defendant resists, the chief will devastate his property. In Unyamwezi the chief does not enforce his decree, excepting if it be one of punishment as distinct from compensation. Among the Wasove enforcement of the judgment is left to divine vengeance following on ordeal: the chief will not enforce his decision.

It will be seen that, though the constitution of these eighteen tribes varies, there is no great variation in the character of their judicial authorities. The main difference is to be found in this, that the tribes which have evolved actual chiefship are judged by their chiefs; those who have no chiefs recognize the jurisdiction of a council of elders. The former are in the minority, and invariably the chief as judge is assisted or guided by a council, so that individual jurisdiction is hardly known. The effectiveness of the judgment given will depend upon the power and influence of the judicial authority, but as a general rule it is no more than an authoritative establishment of a claim the enforcement of which is left to the claimant: the judicial authority neither brings offenders to justice nor enforces its decree. Almost invariably the claimant has the right to redress his own wrong; in fact this is very frequently the ordinary method or that attempted in the first instance, and by consequence the case is submitted to trial rather by mutual agreement than in obedience to any law. As will be seen later, the judicial authority hardly takes upon itself to give a decision

¹ In ancient times several wives, slaves, and councillors were also killed.

on facts in dispute, this being left to some such test as ordeal. Therefore the judicial authority in the main restricts itself to decision concerning undisputed facts voluntarily submitted for decision by the parties interested, and this decision will in almost all cases and in all tribes be in regard to a payment in the nature of compensation. Now at the present day in Europe a crime is considered primarily as an offence against a definite law : it is the breach of a law rather than the injury to a person which is in issue ; but in Africa it is the personal injury which counts : the injured party takes action independent of the public authority ; his redress lies mainly in his own hands, and thus the whole procedure and essence of the law bears a purely private character by comparison with ours. Under our system we cannot, excepting in rare cases, make private amends for our misdeeds, but we can for wrongs which come under the classification of civil suits, such as debts. In Africa all wrongs can be amended by payment of compensation much as though all cases were compoundable with us ; but this is principally a matter for the person wronged to decide. In Africa the injured party has, as it were, the power to convert a criminal case into a civil suit. For instance, if we regard blood-revenge as an admissible penalty on the guilty party, the aggrieved party has the right to inflict this penalty or to convert it into a civil suit for compensation, as he pleases. These are some of the salient points of variance between European and Bantu law, and they are significant if we would form a true estimate of native ideas on the subject.

It must seem that compensation was an ineffectual means for the restriction of crime, but there are aspects of this question which should not be overlooked. Actual crime in olden times would be limited almost to injury of one sort or another which was inflicted in the heat of anger by men whose minds were little capable of controlling their actions, and to them the fear of punishment would hardly be a deterrent. It must, however, never be forgotten that compensation was really an alternative, which the offender could not count on. The most effectual deterrent was the fear of private revenge, which was generally lawful and often a duty. He who offended against many had so many more to fear, and was never safe. And whether redress took the form of revenge or compensation, the burden might fall on the offender's relatives, to whose interest it therefore was to dissuade him from wrongdoing. It thus comes about that at the present day when we admit the application of the old rule of compensation we do not fully retain the essential element of primitive law, for we have eliminated the fear of revenge.

The divergent characteristics of African and European jurisprudence are patent : on the one hand a voluntary means of redress through arbitration and induced by expediency, on the other an inexorable law manipulated by judges of decision. Once this distinction is clear to us we are capable of appreciating a certain perplexity the native must feel in regard to our handling of his affairs, and we shall understand how essential it is that as far as is practicable their disposal should be entrusted to his own tribunals. It may be objected that the native prefers the tribunal of the white

man, but it must be borne in mind that it is mostly only the successful party who expresses an opinion, and under all circumstances the more intimately the court is acquainted with and guided by the native view of a case, the more surely its decision will give satisfaction. The weakest side of the native tribunal is of course its venality, not that the majority or even a large percentage of litigants fail to find justice ; but none is so well aware as the native that complete integrity in his own tribunal is not assured, and it is here that he shows preference for the European courts. On the other hand, it must be confessed that as often as not the underlying idea of the litigant who has recourse to European courts is to derive advantage from the ignorance of the white judge. Another reason for such preference is the more absolute decision thereby ensured, but that a final and irrevocable solution is not appreciated appears from the fact that when, as invariably happens, the losing party again brings forward his case at a later date, often representing the judicial award as an arbitrary seizure by the other party, the latter as often as not omits to refute it, merely repeating the statement of his original case, so that finality is by no means ensured in our courts. Similarly, all the venality of the native court may and often does imperceptibly appear in our courts, in which case the result is, if anything, far less satisfactory than it would have been before a native tribunal.

From all this we may conclude firstly that native jurisdiction should be entrusted to their own authorities, secondly, that we must make it our business as far as possible to ensure there the utmost integrity and finality. These conditions guaranteed by us will satisfy native litigants to a degree which our own courts are not capable of achieving.

EVIDENCE.

The facts of a case of recent date are not often in dispute before a native tribunal, for the judges themselves are as often as not aware of them and there remains only the rule of custom to be decided ; but the majority of disputes brought up are of very ancient origin. As often as not two men will agree to leave a dispute as to a certain claim or property because they are friendly, but later in life the friendship may cool and then come claims and counterclaims. Moreover, a claim never lapses, and consequently what A did not demand from B, the descendants of A may very well demand from the descendants of B. Thus B may accidentally have killed A's brother, but A made no claim because he was B's friend ; but his sons or grandsons will probably not omit to claim from B's descendants. Here, then, the whole matter is in dispute, because none of them is really aware of the facts in issue.

The evidence of witnesses is in general taken greatly into consideration, but this depends largely on who the witnesses are ; for instance, as weighty as a man's evidence might be against his brother, just so worthless it would be in his favour, it being assumed that the witness is biased. To the native a trial is in this respect much like a fight : your brother may be in the wrong, but loyalty forbids you to go

against him. So also it were shameful to testify against a clansman; indeed, some natives, like the Wakamba, always seem to reckon up which of the two contending parties is more nearly allied to them by blood, family, clan, community or tribe, and they give evidence accordingly. Loyalty is simply more weighty than truthfulness, and if a kinsman denies a thing, it is not right to go against him: the blame for the untruthfulness falls on the kinsman. After many years' experience of natives I have to come to the conclusion that in nine cases out of ten in which the truth is spoken in a court, it is spoken by the accused and not by the witnesses. Therefore the native goes so much by what the contending parties say and less by what their witnesses depose to, unless these witnesses have no more interest in the one than in the other. Yet the fewest natives can conceive the rejection of a suit for lack of evidence, and there is undoubtedly a theory that it is for the accused or defendant to clear himself, it being assumed that he is not accused without any cause at all. So often I have had cases referred to me with these words, "and now we appeal to you because this case defeats us," and invariably I have found that the defeat lies in the fact that there is no evidence at all. It will appear more clearly in the following that the burden of proof lies with the accused as a rule.

Under all these conditions it is explicable that the natives resort to superhuman devices for discovering the truth, and it may be said that in the vast majority of cases where any doubt as to fact exists, some such remedy is sought. These devices may take the form of oaths or ordeals or special tests of a supernatural nature devised by medicine men, and finally fatal curses which only affect the guilty one. It is difficult to draw an exact distinction between these various modes of discovery, and their variations are without number, but I propose merely to relate a few in order to give a general idea of the nature of such devices, and mostly I speak of my own experience.

Oath by witnesses is rare, or if administered it is mostly a mere formula, such as stepping over a stick; or the witness submits to an ordeal. For instance, the *Mkamba* may step over a stick and say, "If I lie let my leg be broken," but he is not therefore more credited; or, as among the Wabena, the accused and his witnesses are given a concoction to drink (*Mwafit*) which they vomit if they are speaking the truth. So among the Wakamba and many tribes the witnesses may subject themselves to the same ordeal as the accused undergoes. The contending parties are subjected to ordeal or test, but this always voluntary, though their consent or refusal will influence the decision. Among the Theraka, Wakamba, Kikuyu, Wakarra, Wazigua, Washambaa, Wangoni, Wasumbwa, and Wabungu, the oath or ordeal is always taken either by the accused alone or by him in the first instance. Among the Wasove it is taken by both parties, but by the defendant first. If the ordeal or oath is passed by the accused, the case is decided in his favour and the complainant may have to pay compensation. So compensation is paid among the Wasove, Wabena, Wabunga, Washambaa, Wangoni. Among certain tribes the ordeal may

Such *Kisasi* are manufactured, and are not so much feared as some natural articles obtained in one way or another and inherited from father to son. One such seen, and formerly in my possession, appeared to be a lump of volcanic stone having a hole in the centre.

Something similar to these supernatural objects are the pots used by the Wachagga : of these there are comparatively few, mostly only one in each locality in possession of the chief. But these are not used for an oath between two parties so much as for cursing the unknown evil-doer. In Upare the breaking of any pot operates as a curse, and is commonly used in judicial trials. The devices for detection of an unknown offender are without number, and invariably they are in the nature of curses or witchcraft, to avert which the evil-doer may discover himself and give redress.

Actual tests of veracity may be further applied by particular medicine men, and are without number in their kind. I will only mention two which I have witnessed in Kikuyu for an example.

1. Two men were strongly suspected of a theft of cattle. A medicine man was called in, and his performance was as follows : A common lizard was produced, and after being encircled by the doctor's gourds, was held to the nose of one of the men, who was asked if he was the thief. The men denied it and nothing occurred, but when the second man likewise denied his guilt, the lizard immediately bit him in the nostril. The medicine man pronounced the first man innocent and the second an accessory to the theft but not a principal. The same test was applied to two other men, and this time so soon as they denied their guilt the lizard bit the man's nostril and hung on. These were pronounced to be the actual thieves. I endeavoured, by close observation and experiment with several persons, to discover how the trick was done, but could find nothing to explain it ; the medicine man would hold the lizard on his open palm, so that there was no possibility of squeezing or otherwise provoking it to bite.

2. Two men disputed for the possession of a wife. The one was required to go on all-fours on the ground. A small gourd was then placed on his back, and inside this a leaf, and on it two small bottles sewn in skin. The whole was covered with the man's blanket for a few moments, and on being uncovered the gourd was found about a quarter full of blood—said to be his own and proof of his false statement. Here also I could not find out, despite several repetitions, how the blood was conveyed into the gourd, where the medicine man had a supply of blood about his person, or how he had kept it from coagulating.

Discovery of the truth by ordeal, test, divining, witchcraft, and cursing is, so far as I know, always the business of a medicine man. In ordinary disputes it is left to the parties to have recourse to such means or not, but it seems that they are invariably applied in accusations of witchcraft as a matter of course. Mere oath without fatal consequences is not administered by a medicine man, but may include

much ceremony which requires the administration to be done by elders. One such oath as in use among the Wakikuyu may be described for illustration. A sheep is killed and a piece of the meat, cut from the neck over the shoulder, is roasted on skewers of a particular wood (*mugure*), on which seven bark-rings are made. Seven staffs of elders present are bound together with a bunch of leaves of the same wood, and these are waved round the fire by two of the most senior elders. The staffs are then thrown backwards and forwards seven times over the fire and the heads of the parties who sit on either side of it ; they are then laid between the parties and the fire. The parties now leap over the fire seven times, declaring the truth of their statements as they do so. Next each takes half of the meat roasted, which is cut into seven pieces but not entirely severed ; into each piece two acacia thorns are stuck. The slices are bitten off one by one, and in doing so the person extracts the thorns, saying, "If I lie let me fall like this thorn." This ends the ceremony ; the staffs are unbound and the fire covered with a little grass. The details of this oath proclaim a religious ceremony rather than any medicine-craft, and it is presumed that here the wrath of the spirits is invoked upon the perjurer.

Although ordeal or oath is as a rule confined to the contending parties, on occasions witnesses also may be subjected to the same tests, but in my opinion this is only done when a witness is interested in the decision—in which case, of course, he is regarded more as a party than a witness.

A vast number of cases are disposed of by these methods among the more primitive tribes. In fact, it is generally so when an accusation or claim is entirely disputed, for the judicial authority will not undertake to decide on evidence ; indeed, it is more their duty to arbitrate than to decide, and therefore they are prone to leave decision to divine judgment.

It is said of the Washambaa, Wangoni, Wasumbwa, Wabungu, and Wabena that they have recourse to torture in order to extort confession. Such may occur in any tribe, but it is not considered admissible among any of the tribes known personally to me, and possibly is not so among the five tribes mentioned above.

I have heard of only one tribe with whom ordeal by duel is known, namely the Wabena, but here it is resorted to only on an accusation of cowardice. The duel is said to be fought to the death in the presence of the chief.

All the devices and methods here discussed are but a few of those in use, and are described merely as examples of the ways and means which Bantu consider justifiable and reliable for discovering the truth in any judicial matter.

Some of these practices must appear to us as entirely ridiculous and merely calculated to defeat the ends of justice, so that we are unable to countenance them or permit their application. But we should not condemn them all too hastily, especially as long as natives retain a genuine belief in their efficacy. Let it also be considered that originally they were not intended as indisputable deciding factors in trials, for the ultimate outcome of every suit lay with the parties themselves. And

in point of fact, natives frequently speak of such devices as "witnesses," according as they are considered fallible or not. One reason for suspicion as to the reliability of these tests lies in the fact that either the medicine man who administers them may be biased or the one party may risk the supposed evil consequences rather than give way, or for some supernatural reason their potency may fail, or, finally, the victim may be cured of the ill effects by the aggrieved party. Hence, although the decision may be guided by some such test, its execution need not necessarily follow, and mostly does not ensue through the judges. It is therefore only when we convert the native tribunal into a European court that the application of these means is apt to defeat the ends of justice. Nevertheless, they have their uses, partly because the one who is in the wrong may fear their supernatural power and therefore give way, knowing himself to be at fault; partly because many are in the nature of solemn or sacred affirmations which the native will not flippantly pronounce. Not every witness in a European court is a sincere believer in the divine nature of his oath on the Bible, and yet the oath does call to mind very potently the sacred obligation he undertakes in the court. So with the native, even if he has become sceptical, the ceremonial and traditional performance of his oath, test or ordeal is not without veneration in his eyes, and we shall not be well advised if we discard such ceremonies entirely. What we must do, then, is to distinguish between the mere trick or farce, and retain whatever takes the form of oath or affirmation—a solemn warning, we might call it, that under such circumstances custom and tradition demand the truth to be spoken. With this we must teach the native judges not to rely merely on tests, but to use them only as a means for ascertaining the truth whereon they will decide.

DEATH PENALTIES.

With the exception of acts of blood revenge and similar forms of homicide, an actual death penalty is rarely inflicted among Bantu, and is feasible almost only among tribes who have despotic chiefs. For instance, among the Wapare, robbers were put to death in times and districts in which there happened to be a powerful chief who appreciated the advantages of ordered conditions. Another crime which frequently involved capital punishment was treason, the traitor being of course equivalent to an enemy, and therefore without rights. Thus, among the Wabena, the chief alone could sentence a man to death, but if robbers were pursued and killed by the pursuers, or a burglar was caught in the act and killed, the chief would subsequently sanction the killing. In Sumbwa, the woman who causes herself to abort may be put to death, together with the one who assisted her. Among the Wanyamwezi and Wamakonde incendiaryism was punished with death, that is to say, if the culprit was caught in the act he was hurled into the flaming house. The Wanyamwezi also punished serious thefts, and in particular thefts of slave women, with death. A very serious form of theft was always the stealing of honey hives in the bush and forest,

where they are of course entirely unguarded, and in Ukumba, Kikuyu, and Theraka the thief caught in the act might be killed.

Among the Wangoni it is said that a debtor could formerly be put to death if he refused to pay his debt.

These examples of death penalties are the exception to the prevailing rule among the Bantu that a man's life could not be forfeited by his acts ; they are not general among the tribes, and I doubt if they are commonly applied in any tribe. But there was one crime which invariably was punished with death, namely, witchcraft. Curiously enough, among tribes which I know personally I have always found that no other penalty than death is known for this crime: it is not compensated as murder, and if the detected wizard is not actually killed he is at least required to take an oath or submit to an ordeal which is believed to cause his or her death in the end. But I do not know of a tribe with whom witchcraft is not punishable by death. The vast majority of natives believe that death from natural causes is the work of supernatural and evil magic. Therefore when anyone dies, or even if great numbers die, as in epidemics, the evil sorcerer is sought out by many devices, and having been found and put to various tests, is convicted and put to death. It may be considered what number of persons have lost their lives for purely childish fancies in past times. On the other hand, supposed witchcraft is practised daily everywhere, and the witch as often as not firmly believes in the power of the magic used. Nor is this always mere magic, for the native does not distinguish between the aburdest concoctions and the most deadly poisons, wherefore innumerable cases of so-called witchcraft are undoubtedly simply cases of poisoning. Other harm is done to individuals and communities through dread of supposed injury done to them, as, for instance, when on one occasion a wizard placed some perfectly harmless medicine beside a water-hole, and so deprived a whole community of their water supply for several days. Imagine, then, the futility of impressing on the native the argument that there is no such thing as witchcraft, and his amazement when a person proved to be a wizard by all the tests ever devised is permitted by the European to go unpunished and at large. As often as not the wizard died a cruel death ; in Useguha, Udoe, and Ukwera, he might be burnt ; in Usambara he was burnt or clubbed and thrown over a precipice ; among the Wapare he was speared, after which the head was cut off, or he was stabbed and thrown from a cliff. Among the Wadigo he was buried alive.¹ A peculiarity about witchcraft is that the execution may be said to be a public execution in which the community is concerned, whereas in other crimes punishable with death it is generally speaking only a matter of a right of private revenge executed by the aggrieved party, excepting in some few tribes whose organization has developed to stable kingship. I incline to think that a death sentence was passed only when proved to the satisfaction of all that the witchcraft practised resulted almost immediately in death, or when one and the same person

¹ Or killed with swords if he had driven away the rain.

was proved to be habitually addicted to witchcraft. And here I must speak of a peculiar custom which may be common among many tribes, but which I am familiar with in Kikuyu and Ukamba. Among the former the word *mwinge* and among the latter *kingolle* denotes almost any kind of public justice, including force (I have heard it used for imprisonment), but in its extreme form it amounted to public execution. When a man had repeatedly committed serious crimes, or was a notorious wizard, so that he came to be regarded as a public danger, the assembled elders might decide that he must be put to death. In such case elders from remote parts were summoned, and the accusations made were deposed to in a form of oath, which is believed to be fatal to the perjurer. The culprit's nearest relative was then called upon to give his consent; if he refused he was required to take a like oath that the offender would not repeat his crimes. If he consented, as he would in most cases, everyone set upon the offender, the consenting relative making the first attack by casting earth at him, and thereby cursing the victim.¹ The latter might defend himself, and no claim could be made for any death or hurt inflicted by him, for henceforth the matter was never referred to again or even mentioned. I myself have experienced such a case in Ukumba. An old woman was reported to be an habitual witch and to have killed a number of children. She was summoned to a place where all the people had assembled in the bush, and her own son placed a noose round her neck, while the rest strangled her by hauling at the rope over a bough.² It is my impression that this is regarded as a crime committed of necessity by the people as a whole, and sanctioned by the only one who could take vengeance or claim compensation, namely the nearest relative. Whether or not the same custom obtains among other tribes I cannot say, but I note that among the Sumbwa a family may secure itself against blood revenge by disowning a member who has committed repeated murder or witchcraft: in Upare an incorrigible homicide was beaten and surrendered by his relatives (rupture of brotherhood). In the presence of the chief, who held an arrow aloft, the culprit was stoned and driven away, whereafter anyone might kill him. Among the Wachagga also a reputed wizard might be sentenced to death by his clan and stoned by the women and children. The Theraka under like circumstances flog the offender with terrible severity (*loamba*). The practice among these four tribes seems to me akin to the *kingolle* of the Akamba, i.e., the killing of an habitual offender with the sanction of his relatives.

Excepting a few isolated examples of tribes with whom it is customary to kill human beings at the burial of a chief, the only other permissible taking of life is in the form of infanticide, and this is very common, particularly in respect to twins.

In Ukamba and Ubena³ and Uhehe one twin is always killed, in Kikuyu

¹ In Kikuyu the consenting relative had actually to kill the man by strangulation.

² It was admitted afterwards that the proceeding had been irregular, in that a council of elders from other localities had not been consulted.

³ The father has to pay a penalty of one hoe and one sheep to the chief, and may not mix with other people for several months.

both twins are left to die in the bush. The Banjika and Wanjamwesi kill one child only, if there are triplets. The reason given for these acts is that the survival of such infants would be unlucky. Other tribes kill cripples and deformed children: so the Banjika, among whom also the husband is entitled to kill illegitimate infants of his wife. The Wabunga drown children who are too weakly to live, and so do the Wabena. More disastrous is the practice of infanticide among some tribes, for purely superstitious reasons, as was formerly the practice among the Wangoni, Waziguha, Wapare, Washambaa, Bagwe, Wadoe, and Wakwera. The Wangoni, Bagwe, Wadoe, and Wakwera, it appears, only kill children with whom the upper teeth grow before the lower teeth. The Washambaa kill children for the same reason, also twins, children born at new moon, children who fall from the hands of the midwife, and children born in abnormal position. Not only were such children killed at birth, but they might be killed as adult or old persons, if the diviner at any time indicted them as the causes of general misfortune. Among the Wapare twins were killed, likewise children whose upper teeth appeared first, or in whom the lower incisors did not follow immediately on the upper incisors, children begotten by uninitiated youths, and any child conceived while its mother was suckling and with whom menstruation had not been resumed. Among the Waziguha the superstitious causes of infanticide were almost innumerable and increased with time, until few children survived birth, and the tribe was threatened with extermination. It must not be thought that natives who are given to infanticide are less fond of their children than others. None are more pleased that the custom has been suppressed than are the Waziguha, though superstitious fear may still induce a woman here and there to kill her infant. I recollect two Wapare who gave twin children to a Christian native because for one cause or another they were unlucky. To my arguments they had only to say that they themselves wanted to keep the children, but they knew well that so soon as any ill-fortune befell their neighbours they would at once be accused of having brought it, through these children. And if such a child years later is liable to be put to death as the bringer of disaster it must be admitted that the parents do it a doubtful kindness to allow it to survive. The originators and promoters of this evil belief are of course the medicine men. A superstition arises, and the medicine man is consulted. If he always pronounces the infant to be harmless, people will soon give up consulting him, and his fees will not be forthcoming, but if he frequently discovers that the child is evil-fated and is credited, he will always be consulted and may be sure of a good income. So the medicine men may multiply the causes, and therewith the people's faith in them. Obviously, this cannot go on for many generations, because as it is infant mortality is high enough with all natives, and gradually the tribe dwindles as the Waziguha have, and it may therefore be assumed that where infanticide was extensively practised it was never an old custom.

HOMICIDE.

Penalty for Homicide : Blood Revenge.

When questioned as to the penalty provided by their law for the taking of human life, natives invariably speak of compensation to be paid to the deceased's relatives. But we can imagine how ineffectual such a penalty would be among men who, even if not bloodthirsty, always have little control of their passions, and who have scant if any chance at all of finding redress other than by personal retaliation. Moreover, the amount of compensation is usually not so exorbitant that the average well-to-do man cannot easily pay it, and since it is mostly paid by the family or even the whole clan, it is in effect hardly a penalty at all on the evil-doer himself. It may be said here that whenever we find native law seemingly lax or ineffectual to excess, it is to be suspected that we have either not got to the root of it or that there are underlying aspects of the law which are not apparent to us. So it is with the law of homicide, for the truth is that compensation or blood-money was formerly not the normal penalty for homicide, but rather it was a composition voluntarily accepted in lieu of blood revenge, which is now suppressed by us, and therefore not often spoken of by natives. The only tribes concerning whom I am uninformed as to whether blood revenge was the rule, are the Wabunga and Wadigo, but of these also I am prepared to believe that if the murderer was killed in retaliation no actual penalty would fall on the avengers, the two murders being regarded as a set-off against each other—provided that such vengeance was directed against the murderer or some near relative.

Blood revenge was restricted to the slaying of one person, but it naturally tended to further reprisals, and so to feuds or open warfare, which was not to the interest of the chief, sultan or king, who thereby lost subjects, and consequently intervened. And the degree to which such intervention was effectual was according to the power of these supreme authorities. Thus among the Bakumbi murderers were usually executed by order of the chief; in Usambara the chief had power to execute or enslave a murderer who failed to pay compensation. In Ubena the right of private revenge was apparently not recognized, for here the chief decided either that the murderer should pay or be speared to death by his slave executioner; in the latter event the culprit's property was appropriated by the chief, who awarded a portion to the relatives of the murdered man.¹ We may suspect that in view of the personal gain accruing to the chief, death penalties were common. With the Wachagga also the right of private revenge was undisputed, but was frequently simply interdicted by the chief wherever he had sufficient authority to enforce his decision.

Sanctuary was known in so far as a murderer might seek refuge with the chief, and the latter, not wishing further bloodshed, would decline to surrender the offender, so that the pursuers were obliged to content themselves with payment of blood-money.

¹ The executioner received a cow or an ox out of the property confiscated.

Such was the rule among the Waziguha, Wapare, Wangoni, Wanjamwesi, and Wasove.¹ In Sumbwa, however, the chief could not save a murderer if the avengers demanded the right to kill him. With all these tribes the murderer's life was forfeited at any moment before he gained the presence of the chief. Among the less organized tribes revenge was more certain to follow, because there was none to stay it. The Wamakonde killed the murderer, but if he escaped and found protection with his kindred and these refused to pay, a state of war ensued. In Ukamba, Theraka, and Kikuyu, retaliation was no offence ; the elders would seek to bring about a composition of the crime, but this depended on the voluntary agreement of both parties, and hence internal warfare between family and family, village against village, and clan against clan was so much the order of the day that no man was safe, and even to this day these ancient feuds survive to such an extent that neighbouring villagers are found to regard one another as sworn enemies. The Wakarra knew of no composition for murder or homicide of any sort : blood revenge followed in every case.

Thus it will be observed that compensation was far from being the accepted penalty for murder: either the right of revenge prevailed or this was superseded by the power or influence of the authorities, or it was voluntarily waived in favour of payment. But it is only natural that the waiving of this right was held not to be respectable, and that it would easily be interpreted as cowardly. It is, therefore, quite wrong to speak of murder as a matter of compensation merely.

The right of blood revenge is inherited and becomes more or less obligatory on the rightful avengers. In general it is exercised by the whole or any member of the family, but custom among certain tribes specifies the particular relation on whom this duty devolves. In Useguha, Ungoni, and Unjamwesi the next male relative is the avenger, in Sumbwa the father of the deceased, in Bagwe the brother, or in his absence any male member of the family. In Ukarra a woman who is a mother is avenged by her brother or his son, a father is avenged by his sister's son, a child is avenged by mother's brother, and a brother by his brother. Father, child, and husband have no right of revenge, but whether or not it would be unlawful for those or other relatives to take blood revenge I cannot say. I rather suspect that it is more a matter of obligation than of right.

So far as I am informed, vengeance could be inflicted on one person only, and when it is related that among the Wachagga the murderer and several of his relatives were killed, this simply meant open warfare, just as among the Wamakonde. Elsewhere the rule was as follows : in Upare any clansman could be slain ; in Useguha, if the murderer could not be found, any member of his clan or locality could be killed ; in Kikuyu, Sumbwa, Unjamwesi, and Ukamba, near relatives only, and in Bagwe only a brother ; in Ungoni the murderer's wife might be slain if he was not to be

¹ But among the Wasove a man who killed any member of a headman's family was put to death and his property was confiscated.

found, while in Ukarra and Unjamwesi only a male for a male and a woman for a woman could be killed ; in Unjamwesi it must be the murderer's sister.

With the infliction of retaliation the crime is expiated and further murders were not justified. How strictly this provision may be observed is indicated by a curious custom of the Wakarra : if a man is seriously injured, the person by whom the injury was caused is held captive and subjected to rigorous treatment until the injured man recovers, but should the offender die while in captivity, his relatives have the right of blood revenge, notwithstanding that the other party was acting by right.

Probably among all tribes there were occasions and seasons when blood revenge had to be stayed for religious considerations ; thus in Sumbwa, during the month called *Kwera*, in which the chief sacrifices to his ancestors. The Wakikuyu also have certain periods when rain sacrifices are offered, and during these no man may touch the earth with iron,¹ and I conjecture at such times blood revenge is equally unpermissible.

Blood-money.

I have mentioned before that where blood-money is agreed upon it is mostly paid by the family or clan. Among the Wakamba, Wakikuyu, Theraka, Wapare, and Wasove, the greater part is paid by the clan ; in Useguha, Bakumbi, and Sumbwa the family pays, and the Wachagga say that the family usually subscribed, but that they could not be compelled to do so, though it followed as a matter of course that if they wished to be preserved from a continued feud they must subscribe whatever their offending kinsman either could not or would not pay.

Blood-money is paid to the next of kin as representative of the family, but is generally distributed by him to the various relatives of the deceased. In Useguha the female relatives receive a share. In Theraka, Ukamba, and Kikuyu, I have found that the actual recipient retains only about a quarter of what is paid.

It will be seen that just as blood revenge is not restricted against the culprit only, so blood-money given in place of revenge is paid by and to the respective families. Homicide is, in fact, a crime which concerns the whole family or even the whole clan on both sides ; the clan and family have been weakened by the loss of a member, and this is a loss which is felt beyond the circle of immediate relatives. In this respect murder is treated differently from all other crimes, and has probably retained a significance surviving from the most primitive times in that it reflects so vividly the individual solely as one of the family group or clan.

Manslaughter and Accident.

In the Rombo area of Chagga Land I was told that in the case of premeditated murder blood revenge always ensued, and it seems natural that when it lay with the

¹ It is a very common belief among natives that iron is antagonistic to rain ; in Ukamba the women for long refused to use iron hoes for this reason.

aggrieved party to reject compensation they would be the more inclined to do so in the case of deliberately premeditated as well as unprovoked murder. Perhaps such cases of homicide were more common in former times ; at the present day it must be said that they are rare. The great majority of homicidal cases are the result of sudden quarrels generally arising over beer drinks. But excepting as the aggrieved party may be influenced by the motive to compound the crime, few tribes make much difference between one form and another of homicidal acts : even accident is not always a mitigating consideration, though in such case settlement by compensation is more or less ensured. But very convincing proof will always be required, and it may be said that the onus of proving that it was accident lies with the offender. Of the Sumbwa, Bakumbi, and Wakarra, it is said that whether death was caused accidentally or not, blood revenge is always inflicted ; in Sumbwa even if it was done in self-defence. The same is the rule in Kikuyu and Theraka, indeed the law of these two tribes goes so far as to make a man liable for compensation for accidentally killing a man whilst attempting to save his life, as, for instance, inadvertently spearing a friend who has been seized by a lion ; even for striking a corpse or inflicting a slight injury in course of a fatal fight, a man is liable for half or a quarter blood-money, while in Ukamba the penalty for striking a corpse is full blood-money. In Unyamwesi accident is admitted in practice only if eye-witnesses can testify to it, but killing in self-defence is lawful. In Ubena and Ungoni accident is never taken into account, but killing in self-defence is lawful in Ubena, excepting that one cow must be paid to the chief for loss of a subject. It is said that the Wamakonde in theory do not punish unintended homicide, but that accident is never admitted in practice. In Upare only a small payment is demanded for unintended acts generally, but I am not certain whether this applies also to homicide especially, because in cases of other hurts only the injured person can declare his readiness to believe that it was not wilfully done. Among the Waziguha, Wadigo, and Wachagga, reduced blood-money is paid for accidental killing ; in Useguha killing in self-defence is not punishable. In Ukamba accidental killing is called *Mbanga*, and is punished by payment of half blood-money. The Pare term *Mbanya* for accidental killing is obviously the same word.¹ In Kikuyu the term *Mbangu* has a different meaning, namely, death caused not directly by any person, but by his property ; as, for instance, by a ferocious bull or the fall of a beehive from a tree. In such cases the article or animal which was the cause of death is given to the deceased's relative, but in the Kyambu section of Kikuyu half blood-money is paid ; nothing, however, is due in Ukamba, and in most parts of Kikuyu, unless the person killed was employed or directed to handle the article or animal.

The Wachagga informed me that no compensation is payable in such cases. I regret that the question has not been investigated elsewhere, but a somewhat similar practice obtains among the Wamakonde : here full blood-money is five to ten slaves,

¹ *Chagga* = *Ndenga*.

but if, for instance, a guest is burnt to death in his host's hut, or if a man were to send another to climb a tree, and the one sent were to fall and be killed, one slave must be paid, provided that such deaths were not caused by sheer folly of the victim himself ; in the latter case the host or employer will demand a small fee for purification of his village.

The only tribes of whom it is said that accidental killing is not punished are the Wabunga and Washambaa, but I do not know how much these people will admit as accident.

The foregoing discloses some curious ideas as to homicide. To us they appear harsh, but undoubtedly among primitive people any fine distinction between intention and accident would lead to laxity and overmuch bloodshed ; as some old men remarked to the writer, "If we pardon one man who kills by accident there will be nothing but accidents."

If, however, we make this distinction that the ordinary rule is a life for a life excepting where accident is proved, in which case the rule is compensation for a life, we shall perceive a vital difference between the one form of homicide and the other.

One other point may be mentioned. It is by no means necessary that death should be the immediate result of an attack or injury. As to this I have only my personal observations to go on, and the fact that a claim to payment never lapses. Among tribes such as the Akikuyu, Akamba, and Wachagga, when a person dies, it is always suspected that the cause was witchcraft or the effects of some injury received, however long ago ; in fact a natural death is hardly recognized. So the relatives will harp back to any blow or wound inflicted since birth, and attempt to fix responsibility for the death upon somebody or other. Often, and particularly in Ukamba, the elders then hold an inquest, including a searching post-mortem, to discover any possible internal injury, and though they may be deceived by the effects of a disease, they will very quickly detect any real abnormality of the organs. I do not doubt that the like is done among many other tribes. To what extent liability for human life may be incurred the following instance will illustrate. A man was accused of having cast his infant child into the bush, where it was eaten by wild animals. On this accusation he was arrested and committed for trial, but in the interval he died in gaol. Several years later his son brought a charge of murder against those who had accused his father, basing his accusation on the fact that while the courts had not found his father guilty, his death was due to their unproven accusation, and the elders were quite prepared to uphold his claim to blood-money. Similarly, I have often found the elders reluctant to pass a sentence of imprisonment, because they feared that, should the prisoner die in gaol, they might be held liable for his life. In this connection it may be mentioned that if a person dies elsewhere than in his or her own home, the responsibility falls on anyone who was the cause of his or her absence, as, for instance, if a wife or child were to be enticed

away or abducted, or if a man were kidnapped, enslaved or otherwise made away with.

The amount of compensation is always a definite value, varying only according to particular circumstances, and when seemingly contradictory statements are made by natives it is because they include or omit certain payments which are intended for definite purposes, as, for instance, so many head of stock for reconciliation, purification, and sacrifice. Often the value is curiously computed: thus in Theraka the elders quote a certain number of sheep and goats, and to these add so many for "aiming an arrow," so many for "drawing a bow," for "going out of the village," or any such incident occurring in connection with the event, and these payments they will sometimes include or omit, making a seeming variation in the total amount payable. The Wadigo reckon blood-money as follows: 1st, four cows, of which one "to lay aside the bow," one "to pay for the burial," one "to assemble (the people)," and one for peace-making; 2nd, eight pieces of cloth and eight gourds of liquor; 3rd, a boy and a girl.¹ In Unjamwesi the reckoning of blood-money was most circumstantial: after an initial payment of a slave—or in lieu a cow or a load of salt, cloth or goats—a number of hoes, cloths or goats were paid for the deceased's eyebrows, and on this followed two cows or two slaves for the eyes, forty to fifty pieces of cloth for the hair, and fourteen other payments varying from five to twenty pieces of cloth for the ears, toes, teeth, entrails and so forth, and finally fifteen pieces of cloth for the chief, altogether one hundred and twenty-five pieces of cloth, two cows, one slave, and the undefined payment "for the eyebrows." In Upare blood-money is eight head of cattle besides one bull "for the land," one cow and calf "to dry the mother's tears," one bull "to shave the head," and one bull for reconciliation.

Reductions of Blood-money.

The amount of blood-money may, however, vary according to rank, and in particular according to sex and relationship. Thus in Sumbwa 200 to 1000 hoes are paid according to the rank of the person killed. In Kikuyu there is paid for the life of a woman roughly one-third of that for a man, in Ukamba one-half, in Theraka two-thirds, in parts of Chagga half, in other parts one beast less than for a male life. I can discover only one tribe of whom it is said that more is paid for a woman than for a man, namely the Waziguha. As regards relationship, the fact that the nearer the murderer and his victim are related the more compensation is reduced does not mean that the crime is judged less heinous, but simply that the murderer is to a greater or lesser degree a sharer in the loss, and that further loss of life within the family and clan only enhances the disaster. To take an extreme case: if the murderer is actually the one to whom blood-money would be due, there

¹ If the murderer had no children, his brother's children were given. The receiver could not marry the girl, but appropriated the dowry paid for her. For accidental killing two cows and a boy were paid.

is none to claim from him, and it is for this reason that a man who kills his own wife is not required to pay compensation in Ukamba, Kikuyu, and Theraka, but he is, of course, still liable for any balance of dowry unpaid at the time ; in Unjamwesi, however, the husband who kills his wife may be put to death by her relatives, or compelled to pay full blood-money. For causing the death of near relatives reduced payments are made in Ukamba and Kikuyu, in Chagga only one-quarter of ordinary blood-money is paid for the slaying of a brother or sister, and in some parts of this country it is the chief who claims in such cases, presumably because the murderer would otherwise be a partner in the claim. In Theraka a man who kills his own brother pays only one bull to his clan.

In Ukamba compensation is reduced to the half if the person killed was a clansman or more distant relative than those previously mentioned. Among the Wamakonde the following rules obtain : if a man kills any relative one slave is paid, if he kills his own mother payment must be made to her brother, but if he kills his father payment is due from the mother's clan, because children belong not to the father's but to the mother's clan ; conversely if a man kills his own child he must for the same reason pay full blood-money to his wife's clan. Among the same tribe a man who kills another of his father's clan must pay full blood-money, but if the victim is of his mother's clan the amount is reduced, and it is said that he should not be compelled to pay for her. Again we have an instance of kinship which makes the murderer to a certain degree the loser.

The class of cases last discussed are of course uncommon, but since they shed much light on the Bantu ideas of homicide it is to be regretted that fuller information has not been obtained. The points involved do not present themselves to most enquirers, and are seldom brought to light by natives ; it may even be that they are unaware of the custom involved because they have had no experience of such cases, just as I found that a number of elders could not agree as to the amount of blood-money due for a woman, because they had never heard of a woman being killed. Similarly I have had the most contradictory rulings on the point as to whether there should be deducted from blood-money an amount previously paid for loss of one or both limbs, and ultimately it transpired that no precedent was known for such a case.

Peace-making.

On payment of blood-money a formal reconciliation follows among the Wapare, Wanjamwesi, Waziguha, Bakumbi, Wangoni, Sumbwa, Wachagga, Wadigo, Wakiyu, Watheraka, and Wakamba, and I conjecture among most or all other tribes. A description of this ceremony as performed in Theraka may serve to illustrate such a peace-making : The murderer and the claimant are conducted by elders to a river. Here a sheep is killed, the fat of which is plastered over their eyes so as to blindfold them. A hole is made in the ground and into this they must force the

head of a live goat, provided for the purpose, and at the same time the goat's legs are broken by the two men assisted by the elders, the goat being held until it is suffocated. An elder then addresses them as follows : " You are now as brothers, if you quarrel you shall be broken as these legs."

In Ukamba the ceremony is equally curious : The first instalment of blood-money consists of one cow, one bull, and one goat, and is intended for the peace-making : even where revenge takes place, and no matter under what circumstances death was caused these payments are exchanged.¹ The animals are taken to the murdered man's village, where the elders assemble towards evening ; the murderer and members of his family may not be present. First the goat is slaughtered and seven pieces of the flesh cut from the throat are handed to the widow and her brother-in-law to eat. A small portion of the meat is usually taken secretly and buried at the murderer's village with these words, " I return the evil to you." After this, the widow and her brother-in-law must have sexual connection in her hut. The elders then return and the bull is slaughtered, half the meat being eaten by them and half by the murdered man's family ; a little is also sent to the murderer, who must eat it on the same or on the following third, fifth or seventh day. The bones of the carcase may not be broken or cut, and in the morning they are carried away by the elders and thrown into the bush. The hide may be used by an elder of any clan other than that of the deceased. The cow is given to the widow and becomes her own property.

Most dreaded is the weapon with which the death of a man was caused. Among the Wakikuyu and Theraka it is blunted and buried. The Wakamba believe that it can never lose its evil propensity and must continue to be the carrier of death, and for this reason the contending parties try to foist it on one another by burying it secretly in their villages, or they will lay it on the path, hoping that someone will pick it up and so relieve them of it. The murderer endeavours to induce some other man to buy or take over his bow.

Rites such as these are of peculiar interest as shedding much light on the native's estimation of the value of human life. The shedding of man's blood is a crime which can be fully atoned for in most cases only by the murderer's life ; it carries with it a fatal curse which in some instances seems ineffaceable, and so it merges into the sphere of religion. To a lesser degree the same ideas are probably connected with injuries of any sort, for the Wakikuyu, for instance, always offer a sacrifice when such an offence is compensated by payment, and in token of this wear a ring on the skin taken from the animal sacrificed. If the subject were pursued farther it might be found that such beliefs are based on the assumption that the crime leaves an uncleanness akin to what is known in Kikuyu by the name of *Thahu*, and in Ukumba as *Thuba* and which is conceived to result from certain breaches of good custom. Here we have a clear indication that the anger of the spirits or other supernatural

¹ *Ngombe sya Etuma.* The ceremony is called *Etuma*.

powers has been aroused by the violating of a sacred law, so that there is more threatened to the murderer than merely practical retaliation.

The question arises as to how the introduction of our methods affects the native's ideals in these respects. Undoubtedly a large number of cases of homicide never come to our knowledge because they are settled between the parties themselves. When they are decided by the courts they may not be proved to the satisfaction of the law, though the evidence appears perfectly convincing to the ordinary native. If proven, the culprit may be hanged, and this should satisfy the native's view in most cases, though in some cases the penalty will seem to him over-harsh, as, for instance, if a man should be hanged for killing his brother, for, apart from the fact that in such instances blood revenge would never follow, there is the circumstance that the family and clan are further weakened, and the last state is held to be worse than the first. In a very large number of cases, however, the technical circumstances of the case are such as to reduce the crime from murder to a less serious degree of homicide, and the penalty inflicted will be merely one of imprisonment, although in the native estimation the case may be identical with another in which capital punishment was awarded. There follows, then, no revenge, no payment of blood-money, and neither reconciliation nor purification, and it is not surprising if the natives seek to settle homicidal cases among themselves, for they are utterly unable to foresee of what sort the outcome will be if the matter is submitted to our courts. It is often argued that we must strive to impress upon the native a higher value for human life; but on the one hand he evidently esteems it most highly, and on the other hand our methods may often tend to cheapen life, either by killing the culprit, where such was not justifiable under native law, or by allowing him to be at large when his life was forfeited under the same law, as well as by disregarding and superseding the religious aspects of the crime. It is not easy to say exactly what changes are to be recommended in our present system, but briefly, our main object should be to give the utmost consideration to the native view of each particular case. We shall not impose our ideals by deposing him, and if we wish the native to have a true regard for human life we shall do best to preserve the conceptions he has originated of himself. Therefore, I believe that the punishment for murder should be directed according to technicalities in conjunction with the native definition of the crime.

SEXUAL OFFENCES.

At the present day adultery and other sexual offences are dealt with according to the law of compensation, and the amount paid, though high in some districts, is all too moderate in others, as will be seen from the schedule attached hereto. But it must not be thought that in former times there were no other deterrents to this class of misdemeanours. In Useguha, Ungoni, and Rombo the right to kill an adulterer was admitted. Among the Wasove the adulterer caught in the act might be slain, and among the Wabunga the husband had the same right if

compensation was withheld. In Unyamwesi and Ubena a man who committed adultery with the chief's wife was put to death. In Uhehe the adulterer was seized and his shin bones were crushed between stones. Other natives will often say that the husband could kill an adulterer whom he caught in the act, but I do not hold that such was considered to be lawful ; what is meant is that it was very usually done, and it must be considered that adultery would in former times very frequently lead to murder, so that the adulterer always ran a grave risk. We are speaking of primitive men who looked less to the law and more to their own ability to vindicate their rights, and in respect to this and other crimes we make a great mistake when we regard compensation as the only means whereby crime was prevented in former times. Notwithstanding this the amount of compensation is fairly high with some tribes. Thus in Ubena two oxen and two rams, in Rombo two to three cows, in Upare two cows, in Usambara five cows, and among the Bakumbi thirty goats. This means that in Usambara the price of adultery is equivalent to that of dowry ; in Upare and Rombo it is more.

While the husband may prosecute for adultery committed with his wife, the wife can never complain of adultery committed by her husband, but unfaithfulness on the part of the husband is very commonly the reason for her desertion. The guilt lies entirely with the man, and mostly the husband will not even reproach his wife for unfaithfulness. One or two express exceptions hereto may be noted. In Ungoni an adulteress is beaten ; among the Wasove she is killed if she is the chief's wife. In Ubena, strange to say, the adulteress receives half the compensation paid by the seducer, but if it is proved that she instigated him, she or her family must pay to the husband half the compensation, which is one ox and one kid. Compensation is always payable to the husband ; a single exception to this is to be found in the Sumbwa custom, under which the husband receives 100 hoes, the king 50, and the elders 22 ; possibly these payments should be called fees or fines rather than compensation. A peculiar custom of the Wachagga suggests the view taken by the native : here a man who betrays the adultery of a woman to her husband must himself pay as much as the adulterer pays. It is argued that it was not his business to watch another man's wife, and that by so doing he usurps the rights of a husband, which in point of fact is the essence of the offence of adultery. The same idea, and also the total disregard of the woman's share in the blame, are reflected in the law regarding rape. Strange to say, the compensation demanded for this crime is in most cases the same, or practically the same, as in the case of adultery. According to my information, rape is punished by payment of three cows and two goats in Usambara, while the compensation for adultery is five cows. It may be that this is incorrect, but it would not surprise me if rape as an act committed against the woman's will is regarded as less serious, seeing that the offender has not stolen the woman's affections from her husband. In Upare one bull and a keg of honey is paid in addition to compensation as for adultery. The Theraka demand

seven goats as compared with three for adultery ; the Kikuyu four goats instead of three. Among the Wachagga a difference is made in that the chief demands a bull, it being the theory that all women belong to him ; in addition, the husband receives a bull instead of a cow. Otherwise the two offences are treated alike.

In my opinion adultery is not a very common offence among the tribes with which I am acquainted, and rape is rare. The fact that so many cases of adultery come to notice does not justify the belief that it is common ; it is, as a matter of fact, more the exception than the rule which comes to our notice in all native affairs, and the frequency of such an offence can only be gauged by comparison with the number of marriages in which these irregularities never happen.

So far as my information goes, free love is nowhere recognized as the normal and approved custom for unmarried adults. At the same time it is not punished, and the tendency has been in the direction of increased immorality of this sort during recent years. Nevertheless there were and are still certain limitations and considerations which at least prevent promiscuous harlotry. It is said of the Wabena that their habits of life preclude such illicit intercourse. In Ugoni the seducer of a girl had formerly to pay ten to fifteen goats—that is to say, more than the penalty for adultery. Among the Wamakonde the offence was punished as adultery unless the parents had given their consent. The Wasangu punished the seducer by plundering him and all his family. Where a young couple consort sexually it is generally understood that they must subsequently marry. Such is the strict rule among the Wabunga. In practice such relations are in fact and invariably only a prelude to marriage, and the long period of betrothal customary among most of these tribes more or less ensures that the girl either remains pure or consorts only with her betrothed.

In Ukarra a pregnant girl is banished from the island and can never be married. Elsewhere the value put on chastity appears from the price set on virginity, which is sometimes deducted from the dowry when the bride is not a virgin. The Wakitusika pay more dowry for a virgin, so also the Waziguha ; and even in Sumbwa, where it is said that few marriageable girls are virgins, a price of two or three rupees is paid for loss of virginity. More usual, however, is the imposition of a heavier penalty for causing a girl to become pregnant. Among the Bakumbi this penalty is fifteen goats, or half the amount of dowry¹ ; in Unyamwesi twenty-five rupees, or about the value of full dowry ; in Usambara three cows, which is three-fifths of full dowry. In Ubena the penalty is one cow (dowry two bulls and two goats) ; among the Wasove ten sheep (dowry one cow and one goat) ; in Kikuyu ten goats, or one-third of the customary dowry. In Ukamba the offence is the same whether a married woman or a girl be made pregnant, and the offence is considered as most reprehensible. When this is paid it is deducted from dowry among the Wakikuyu, Wakamba, Wadigo, Wapare, and Wachagga. I do not know if the same is done elsewhere, but

¹ If the man wants the child he must pay ten or twenty goats, according to the sex.

think it very likely, at least in cases when the seducer becomes the husband. It follows that the seducer does best to marry the girl, and since it happens in most cases between persons who intend to marry, such intercourse is not entirely promiscuous. Europeans are, of course, often misled as to the actual nature of native practices. Thus I have found that it is popularly believed that the Wakikuyu permit free sexual intercourse between the unmarried girls and youths. Actual sexual connection is, however, not permitted nor indulged in excepting in rare cases, but the girls and warriors may and do indulge in any other extreme of intimacy. This is called *ngwiko*, but the offences of rape, adultery, and sexual connection with an unmarried girl are one and the same to this tribe.

More serious are the consequences of illicit intercourse when the woman dies in childbirth, or the issue of such union dies at birth. In the first of these events the seducer has to pay full blood-money in Ukamba and Theraka ; in the latter event, the Mkamba pays two bulls and two goats, the Theraka forty goats or the equivalent of blood-money as for a woman. In the Nyeri section of Kikuyu full blood-money as for a woman is paid in either event (in the Kyambu section only three goats). I regret not to have information as to the custom on this last point among other tribes with which I am not personally acquainted, but I should incline to suppose that everywhere death resulting from illicit intercourse would always be regarded as in the nature of homicide and compensated accordingly.

Curiously enough, several tribes permit sexual intercourse between immature children and regard it in the light of play.

A complete study of native customs and law would no doubt reveal a number of superstitions and prohibitions calculated to check immorality. To quote a few examples : (1) The Wakamba believe that it is most unlucky to have sexual connection by daytime and on a journey. (2) The Wapare and Wataveta observe a ceremony called *Ngashu ya Mashitu*. The details are many and curious, but the gist of it is to give the participating youths and girls the qualification for begetting children. Any child born of a person not so initiated used to be put to death, and in the event of the uninitiated mother dying in childbirth the seducer had to pay full blood-money. (3) The most heinous crime known to the Wachagga is sexual intercourse by an uncircumcised boy with a female of any age. Formerly the guilty couple were taken to a place above or below the inhabited lands, and being laid one upon the other, stakes were driven through their bodies and limbs.

Intentional procuring of abortion cannot be common among people with whom offspring is so highly valued, but occurs with some tribes. The Wabunga, Banyika, and Wakitusika do not punish this offence, nor is it punished among the Wanyamwesi now, but formerly in this tribe the woman was often driven out of the land. Among the Wasove it is said to be punishable. In Usambara and Upare, if the woman dies of the effects, full blood-money must be paid, and I think it likely that such would be the rule among most tribes if it were done without the husband's consent. The

Wabena and Sumbwa regard it as a matter of witchcraft and put to death both the woman and the one who assisted her. Among the Wamakonde, with whom children belong to the mother's family, the husband has to pay a number of slaves if he consents to or instigates his wife to procure abortion.

Professional prostitution within the tribe is practically unheard of among all these peoples, and if now thousands of prostitutes are found in our townships and centres they are detribalized women cut off from their own families.

Incest is generally said to be unknown. In Usambara it is said to occur, and the guilty persons are here exposed to public ridicule. In Upare it is regarded as a form of madness requiring sacrifice. The Wamakonde treat as incest sexual connection between the remotest relations, and punish it by payment of slaves to the woman's relatives. Among the Wanyamwesi and Wabunga it is said to have been punished by death.

Unnatural offences are to all intents and purposes unheard of, and the only cases which have come to my knowledge were between convicts serving long sentences of imprisonment. However, in Upare it is said that small boys amuse themselves in this way as a form of play.

Compensation paid for Adultery.

1. Wapare	2 cows.
„ (Vudee)	No payment.
2. Washambaa	5 cows.
3. Wamakonde	1 slave girl.
4. Wangoni	10 to 12 goats.
5. Wasove	1 goat and 1 cow.
6. Bakumbi	30 goats.
7. Wanyamwesi	15 rupees and 1 goat.
8. Wadigo	1 bull.
9. Wachagga	1 goat to 1 cow.
„ (Rombo)	2 to 3 cows.
10. Wabena	2 oxen and 2 goats.
11. Sumbwa	172 hoes.
12. Wakamba	1 bull and 1 goat.
13. Wakikuyu	3 goats.
14. Watheraka	3 goats.

MARRIAGE.

Polygamy.

There is but one tribe among those discussed in which monogamy prevails, namely, the Wakarra of Ukarra Island in Lake Victoria. So far as I am aware polygamy is the rule with all other Bantu, and on enquiry I find that even in Ukarra it has recently been introduced by certain chiefs. In passing, it may be

mentioned that the customs of the Wakarra are in many respects unique. They are a small island tribe who may have been compelled by local conditions to depart from the ordinary habits of their race. Otherwise polygamy is the normal estate. A single wife is the indication of poverty ; many wives mean wealth. They bring strength to the family and by consequence the husband of many wives is respected and esteemed.

Excepting among the Wakarra there is in no tribe any limit to the number of wives a man may have. It depends only on the wealth of each one. I have known natives who had twenty, forty, and even over a hundred wives ; but if it be possible to generalize at all, I should say that five is a number exceeded only in exceptional cases. The average has been found in one or two tribes to be two and a half wives per husband. Where a man's wives are very numerous he will often settle them in different villages, sometimes remote from each other. This is usually done in order that he may keep his cattle in different parts of the country, so that in the event of an epidemic stock disease visiting the locality where he usually resides, portions of his whole wealth will remain intact.

I do not recollect having seen or heard of an African spinster, and bachelors of mature age are rare in the extreme. The African can hardly imagine adult life as anything but a state of matrimony. Even impotent men are found to have wives whom they permit to consort with other men. Indeed the African is to such an extent dependent on women that he is hopeless and helpless without them, a fact which gives the women an influence and power which if not obvious is none the less actual and to be reckoned with.

Wife's Domicile.

As a rule the wives live in one village, or it may be in one building, but always each has her own apartment or hut screened off from the others. So also each wife has her separate household which she shares only with her own children. She cultivates her particular field or a distinct portion of a common field, and she tends a certain portion of her husband's stock assigned to her care.¹ Exceptions to this rule are made only in respect of a young wife who may be housed with her mother-in-law or an elder wife for tuition during a limited period. Here and there wives have been quartered together merely in order to evade hut tax, but it is always regarded as contrary to good custom, and invariably leads to quarrels and dissension on the part of one of the wives.

As a general rule the newly-wedded wife goes to live with her husband ; but there are exceptions to this. Thus in Useguha husbands lead restless lives, for unless a man has all his wives in one village they live with their parents, and in any case after a few years of married life a wife always insists in going to live with her parents, whither the husband has to follow her. Among the Bakumbi he must live from two

¹ See under Inheritance.

to five years with his parents-in-law, and the Mkonde always builds his first hut at the village of his wife's parents. In Sumbwa the husband lives at his wife's home if he has no home of his own, or if his wife disagrees with his relatives. The Mnyamwesi must pay one to five rupees for permission to take his wife from her parental home, while among the Banjika the first wife may make her husband follow her; other wives, however, go to his village. In Bagwe if a man marries a girl of the royal family he must live with her.

Senior Wives.

Among the wives one is the senior or superior, generally called the "big" wife, and so far as I am aware she is always the one first married. She supervises the other wives. Often they have to do one or two days' work in each season for her. Strangers are entertained in her hut, and the other wives must assist her to prepare food for them. The husband usually consults his senior wife in all domestic affairs, and in his absence, if there is no adult son, the management of the village will rest with her. Actually she is mistress of the home to a far greater extent than the husband is the master, and contrary to the accepted theory it is a fact that the "big" wife, at least in her own home, is very far from being the down-trodden slave of her husband. Finally, the sons of the senior wife are seniors over all other children, and as a rule they inherit the major portion of the father's property,¹ though they may be younger than other sons, and thus it is that seniority as between the sons of one man is dependent on the rank of the mother, and not on the actual age of the child in relation to others. Among the Wamakonde the husband must obtain his first wife's consent to take a second or further wives. Not that the senior wife will object to other wives, for apart from considerations already mentioned she will favour it because a single wife has always more work to do than one of several, and thus it comes that notwithstanding incessant jealousy and resulting quarrels between the wives, a man is more often than not urged by his first wife to marry a second or more wives. Among certain tribes the senior wife may be degraded from her rank for misconduct, but this is rather the exception, and the more general rule is that she can never be superseded; in any case her children can never be deprived of their place as the seniors of their generation.

In Ukamba, Kikuyu, and Theraka the senior wife may not marry again on the death of her husband, and this distinction between her status and that of other wives suggests one reason why the position as a junior wife is not objected to, despite a certain inferiority attaching thereto. It also indicates very strongly that the position of the senior wife is not merely a matter of formal rank. The subject should be more closely investigated, for it is possible that we should ultimately come to recognize the first as the only true wife, the others being more or less in the position of concubines, or perhaps we should discover herein a relic of times

¹ See Inheritance.

when polygamy was preceded by concubinage. One thing I am sure of, namely, that while second and subsequent marriages are mostly matters of convenience, that with the first wife is generally one of affection, and hence in spirit and in fact the whole relationship differs in the one case from the other. It does not follow that a younger wife may not become the husband's favourite, but his right-hand and most intimate companion is in almost all cases his first and senior wife.

Marriage with Relations.

In general these tribes are exogamous. Marriage with sisters is unknown and strict endogamy is nowhere the rule. But marriage with cousins is permissible among certain tribes, and with the Wamakonde and Wapare of Vudu it is even usual (but not obligatory) for a man to marry his cousin as his first wife. In the first-named tribe subsequent marriage with a cousin is not permissible. It may be noted that among the Wamakonde the ordinary ceremony is omitted on marriage with a cousin: cohabitation suffices to confirm the union. In Usambara the only rule as to marriage is that a man may not marry a girl whose relatives could be held liable for payment of dowry in the event of his inability to pay. Marriage with cousins is permitted also in Ubena, Ukarra, Ungoni, while the Wabunga permit marriage with a cousin on the mother's side. The Bagwe, a tribe with Hamitic strain, observe different rules according to social rank, and breach of these was formerly punished with death. In Useguha marriage with ascendants and descendants, the wives and concubines of such relatives, is prohibited. The Wakitusika forbid marriage with cousins. Among the Banjika it is unlawful to marry a girl who is related by marriage, and in Sumbwa persons related in the remotest degree may not marry. Marriage within the clan is unlawful among the Wakamba, Wakikuyu, Watheraka, Wachagga, Wasove, and Bagwe (in certain cases). The Wanyamwesi, a people composed of a great number of sub-tribes, or possibly and originally clans, only marry women of other sub-tribes. A sultan may, however, marry the daughter of his counsellor, if the latter is a slave. With several tribes marriage between children of blood brothers is unlawful by reason of the spiritual relationship between their parents.

Marriage between persons of different tribes is of course hardly contemplated by tribal law, and in so far may be considered as no marriage. It is perhaps for this reason that among certain tribes smiths and hunters may not marry women of other classes, they being originally not members of the tribe, but aliens, such as Derobbo and other aborigines.

Age for Marriage.

It is a very common rule that a younger child may not marry before an elder, but it is one which is not strictly observed excepting in the Sumbwa tribe. In Useguha and Usambara the rule applies only to daughters; among the former it is so far

observed that if a girl is about to marry before her elder sister the latter will make pretence of being married by cohabitation for one night with some youth. In Sumbwa, Bakumbi, and Bagwe the custom relates to both sons and daughters, but in Unyamwesi and Ubena to sons only. I believe, however, that among all tribes it is certainly a good custom for a younger child to await the marriage of an elder brother or sister.

In general, the age at which native girls marry is more or less that of puberty. A hard and fast rule on the subject can, however, hardly be laid down, and child marriages are not unknown among Bantu. In Useguha and Ukarra girls may be married before the age of menstruation, while Wabena girls are married as early as ten years of age. In Upare, Taveta, and in parts of Usambara, marriages between very young children are contracted throughout the country at certain periods. This is done in connection with the *Ngashu* ceremonies at which the youths are initiated into manhood, so that they may lawfully beget children.¹ I incline to doubt that original custom required that the initiated should be married, but at the present day, and particularly in Taveta, the people seem to assume that the initiation must be followed by marriage, and since they include the youngest boys in the celebrations the result is that absolute child marriages take place. The boys and girls so married do not, however, necessarily live together.

Betrothal.

Marriage is invariably preceded by a period of betrothal, which may commence in early childhood. Among certain tribes it occurs that betrothal is concluded by agreement between parents even before the betrothed are born. I do not know of any tribe, however, in which such betrothals are binding. The conduct and relations between betrothed persons vary much according to tribal custom. Among some tribes they may not even see each other; in others they are permitted to consort sexually, but it may be said that wherever the latter relationship exists the betrothal becomes irrevocable, in theory at least, and certainly in practice if pregnancy results. Invariably the suitor is required to give presents to his prospective parents-in-law. In Ubena he must work for them, and in Usove both the suitor and his affianced respectively have to work for their prospective parents-in-law. But whatever is given must be refunded if the betrothal is broken off, and no matter whether it was given to the girl, her parents, or to other relatives.

Forms of Marriage.

If the betrothal continues until marriage this is invariably marked by a celebration which involves much ceremony of a religious character. The most essential item of these ceremonial proceedings is usually the conducting home of the bride, and it is to be noted that it is very usual for her to be carried. In some localities mock fights take place during the procession to the bridegroom's hut;

¹ See under Death Penalties.

among the Wabunga pretence is made of enticing the girl, small gifts being made at intervals on the way. These practices are reminiscent of wife robbery in former times, and in fact although forcible capture of wives is not actually recognized to-day, it does occur, and mock abduction as a form of marriage ceremony is not uncommon. Among the Wanyika this is the regular custom. The abduction takes place with the girl's connivance, if she is willing to be married, but by force if she is averse to it and has been coerced through parental persuasion. In Sangu (Ubena) brides are often robbed with consent of the chief, or if a chief sees a man who cannot otherwise obtain a wife he will say to him, " Go to so-and-so and take your wife." Among the Waseguha, Wachagga, Sumbwa, and Wanyamwesi abduction of girls is commonly done with their consent, when the suitor is unable to pay dowry or the parents are unwilling to let her go after dowry has been paid. In Ukamba parents often withhold the bride in order to exact further gifts from the suitor, and in such cases she will arrange with him to come at night and steal her away. Where such practices are in vogue it will be found that the abduction is accepted in place of the ordinary marriage ceremony, and though the parents may deny the husband's right to the girl unless dowry is paid at once, a lawful marriage is considered to have been contracted. With the Wachagga the custom of abduction is common and is frequently strongly resisted, so much so that the chiefs have forbidden it in some localities. The girl's consent is a necessary condition, but notwithstanding this it is regarded as a point of decency that she should protest and scream loudly.

Dowry.

Payment of dowry to the wife's father or guardian is the practice among all these tribes, but the amount or value of dowry varies very considerably, and is not always an indication of the wealth of the tribe. The following is a list of the dowries, customary among some of the tribes, in so far as they can be scheduled :—

1. Wakamba .. 2 to 5 cows.
2. Wakikuya .. In Ndia 30 goats. Elsewhere the amount of dowry paid for the girl's mother.
3. Theraka .. About 50 pots of honey in preliminary payment. Actual dowry : 1 heifer and 1 goat, or 2 heifers and 1 goat, according as one or more children are born.
4. Wapare.. .. 2 cows, 2 bulls, 2 goats and liquor ; for a virgin 2 goats in addition. If the woman has children prior to marriage the dowry is reduced.
5. Washambaa .. 20 calabashes of liquor and 1 goat in preliminary payment. Actual dowry : 4 cows and 1 goat.
6. Wakitusika .. Various amounts of small value.
7. Wamakonde .. Various amounts of small value. No dowry is paid for a first wife if she is a cousin.

8. Wangoni	..	Rs. 10 to 15 according to social standing.
9. Wasove..	..	1 to 15 sheep according to social standing.
10. Wabena	..	Formerly 2 hoes ; now 6 to 10 hoes or 2 to 3 sheep.
11. Wabunga	..	Undetermined.
12. Banjika..	..	Minimum Rs. 15 and 1 cow.
13. Sumbwa	..	150 to 1000 hoes according to rank (5 hoes = Rs. 1).
14. Bakumbi	..	1 to 10 head of cattle, 10 to 100 sheep.
15. Bagwe ..	..	Cattle in value of Rs. 50 to 60. (Formerly 12,000 cowries ; for a widow, 5000.)
16. Wachagga	..	About 23 pots of beer in preliminary payments. Actual dowry is 1 to 2 heifers according to the number of children born.

It will be seen that in the majority of tribes dowry is either fixed at a definite value or is determined by circumstances, such as the mother's dowry or rank or social standing, and by consequence there is little to haggle about. It may be that some fathers will seek to exact the utmost value, and to that end they may be prone to close with the highest bidder, but he will as often as not be frustrated by his daughter's choice, and it is always regarded as shameful. The remark, "Are you trading with your child ?" will generally bring the father to reason.

Another consideration which opposes commercialism in the matter of matrimony is the fact that immediate payment of the whole dowry is rarely demanded. Indeed I can only find four tribes of whom it is said that payment must be made on or before marriage ; these tribes are the Wakarra, Wakitusika, Wanyamwesi, and Sumbwa, and it should be noted that excepting for the last-named the amount of dowry in these tribes is trifling. As example : in Ukarra, two hoes, a value which may well be demanded without delay. I doubt, however, that even in these tribes immediate payment is always demanded, or that original custom was as the present-day practice. In other tribes dowry is paid by instalments, as among the Wangoni, Wabena, Wabunga, and Banjika. With the Wapare and Bakumbi half is paid at marriage and the balance later ; among the latter tribe, if ten goats are paid at marriage, ten more must be paid at the birth of the first son, or twenty goats if the first child is a girl. In Upare the remaining balance is due when the first child is born. The Wachagga and Washambaa make only preliminary payments before marriage ; actual dowry is never paid until the first child is born. In fact, with the Wachagga the amount of dowry is dependent on the number of children born, and in certain sections of this tribe nothing is paid until the wife is no longer capable of bearing children. In the Ndia section of Kikuyu no more than one cow is paid until the woman has given birth.

Mode of Recovery in Default of Dowry.

Inability to pay need therefore be no bar to marriage, and to further obviate such an obstacle to the girl's choice I have found that in most tribes there are

guarantees provided. I presume also that such safeguards are customary in all tribes. Thus among the Bakumbi, if nothing is paid, the children belong by right to the wife's family, but the father may purchase them. The invariable rule is that in default of payment the woman's father claims one or more of her daughters, or the dowries obtained for these when in due course they are married ; so the Mkamba takes the whole dowry for one daughter even when only a portion of her mother's dowry remained to be liquidated. In Kikuyu the custom varies ; for instance, in the Tetu section the father-in-law may appropriate the dowry for the first, second, and third daughters of his son-in-law, less five, ten and fifteen goats respectively, but only in default of full payment of dowry for his daughter. In Kyambu he may claim the whole dowry for one daughter in satisfaction of a portion of the mother's dowry, and elsewhere he may take two-thirds of the dowry for each daughter. As might be expected, fathers do everywhere take back their daughters if dowry is not forthcoming, but this is done more to enforce payment than as a permanent rupture of marriage-ties, and it is not considered as the most respectable course to take, the only proper method being to wait until the husband can pay, which will be when his own children are married. Perhaps in one of every five marriages dowry payment is deferred, often during life, and a very great percentage of civil suits are for recovery of dowry due for the claimant's aunt, grand-aunt, or female relations even more ancient than these. Payment may also be ensured by such beliefs as the Bagwe have, namely, that non-payment may cause the death of the children born. In point of fact, however, it is more often the woman herself rather than her father who insists on payment, because she feels it as a slight to be married without dowry, and the husband may frequently lose his wife until he fulfils his obligations to her father.

So in various ways the poverty of a man need not be an impediment to his marriage ; even if the cupidity of the father is not to be overcome, the tribal authorities will always sanction it if the young couple simply elope.

Meaning of Dowry Payment.

I conjecture that it is the payment of dowry which has given many Europeans what, in my opinion, is an entirely wrong impression of marriage among Africans. Because we see such and such a value given, and because it is this value which is apparently the main point in issue, when the matter comes before us for adjudication, we have come to regard the whole subject of matrimony as primarily a commercial transaction, and women are represented as chattels to be bought and sold. But such is by no means a true representation of native marriage, nor are women regarded by themselves or their husbands as chattels. If dowry were an actual purchase price the husband would be at liberty to re-sell his wife, but I can discover only one instance in which this is lawful, namely, among the Washambaa ; if a man has liquidated a debt for his parents-in-law, and subsequently gets into debt himself,

he may sell his wife. It is, however, to be observed that the alternative in this tribe is for him to become a slave, and similarly in Ungoni a husband may sell his wife and children to avoid slavery for debt.

I rather incline to think that when the term "to buy a wife" is used in Africa this is an expression introduced by Europeans. Natives among themselves speak of "taking" or "marrying" a wife. While I would not take upon myself to define the origin of dowry payment, I will here draw attention to certain points and considerations which may shed some light on the subject, and the natives' notions thereon in particular. The frequent recurrence of practices reminiscent of wife robbery suggest a time not so remote when this was actually customary, and it seems possible that at some time the robberies, or rather the fights ensuing thereon, were compounded by a payment, which is now called dowry. Another view taken is that dowry represents compensation for the loss of a worker in the family. Another explanation is suggested to me by certain customs which are very prominent in Ukamba, a country in which original custom has been preserved perhaps more than in most tribes. There it is still the custom to brand only cattle received in dowry, and though it is true that such cattle are occasionally sold at the present day, I have satisfied myself that the sale of cattle obtained in dowry was considered shameful, and that it never could have been permissible follows from the circumstance that to this day the husband has full right to reclaim on divorce not only the identical animals given by him, but also their progeny; and so much is this right admitted that even where the animals have been purchased by a third party the husband's claim is upheld. Out of this arise the most complicated cases. I have known such stock to pass through the hands of six purchasers, and be finally recovered by the original owner. The seeming inequity of this custom became explicable to me only when I realized that the father-in-law had no real right to dispose of stock received in dowry for his daughter, the simple rule being that so long as A's daughter was with B, B's cattle must be with A. The suggestion is very strong that the dowry given was simply a security or bond for the person of a daughter.

There is, however, another point to be considered. From the foregoing it appears that in default of dowry payment the woman's parents have a claim to her children, a right which is more definitely admitted than is the right to take back the woman herself; conversely, and as will appear later, a portion of dowry is often returned if the woman dies without issue. It seems to me, therefore, that dowry may really be a payment whereby the husband's right to the children is acquired.¹ As further bearing on this subject I may mention a curious practice in Kikuyu. Here, if a man dies without heirs, his widow may pay dowry for another woman, who may then have children by any member of the deceased's clan, and these children become heirs to his property. It is the payment of dowry which gives legitimacy to the children. However this may be, it is certain, I think that,

¹ See also pp. 261 and 265.

we must get away from the idea that marriage and dowry are matters of sale and barter, and that the parents regard it as a lucrative transaction. It may be thought, and indeed it is popularly believed by Europeans, that native girls are married as their parents direct, and that therefore a father always selects the suitor who will pay most ; but apart from what I have already said as to the customary value of dowry payments, I wish particularly to emphasize the liberty a native girl has as to her choice. The betrothals made in early childhood are but family arrangements which may or may not be fulfilled, and are in no way binding ; in general, it may be said that no betrothal exists until the couple themselves have contracted to marry. The marriage ceremony always includes a formal signification of consent on the part of the girl, and everywhere it will be found that it is considered bad custom to coerce a girl into marriage. I do not say that girls will not marry to please their parents, or that the influence of the family may not decide for her, but those who know natives will appreciate the difficulty of forcing their women to do anything against their inclinations ; and native custom was never so foolish as to permit coercion in these matters, for even if a girl does submit to a forced marriage, it is certain that she will not long abide by it. Parental persuasion has, of course, its weight in Africa as well as in Europe, but the native parent is extremely indulgent towards his children, and is no less anxious than is the average European father that his daughter should exercise her own choice in the matter.

Wife's Property.

The bride always brings with her a few household utensils, but not infrequently she also brings a small amount of livestock which she may have acquired by gift from her parents or by her own industry. Thus among the Wachagga a girl is always given a little stock according to the wealth of her parents. It is customary for a father to give his daughter at least one cow to provide her with milk, and wealthy men such as chiefs may give as many as ten cows. Actually the Chagga woman often brings to her husband's hut more than her husband pays in dowry for her, but most usually she leaves all but one cow with her parents until she has children, when she will make a gift of her livestock to these. In Ungoni and Ubena the wife brings a goat or a cow. The Mbunga wife brings slaves, who become concubines for the husband, and in Sumbwa also the bride brings slaves to her new home. Among the Bakumbi and Wakarra, daughters inherit a share of their parents' stock,¹ and this share they retain when married. In Bagwe also, rich people furnish the bride with stock. In Ukamba and Theraka it is possible for a woman to own stock, though she is restricted in the disposal thereof. In addition to such dowries a woman is invariably entitled to acquire what she can by sale of the produce of her field or other industries ; it is said that such is, however, not the case in Sumbwa, and that the Mkonde woman can claim as her particular share

¹ See Inheritance.

only one-third of her crops. With these two exceptions women are otherwise sole owners of all property which they bring at marriage or subsequently acquire, and though the husband has, of course, the benefit, he cannot lay claim to any such property.

Compensation on Death of Wife.

The death of a woman does not usually entitle her husband to make any demands on her family. But in Ukamba and Kikuyu, as also in Ubena, it is customary as an act of goodwill to refund a portion of the dowry ; in Ukamba, if no child is born, one cow is refunded. In certain sections of Kikuyu (Ndia and Kjambu) two-thirds of the dowry if no children were born, or one-third if only one or two children. Such returns cannot, however, be demanded as of right. In Ungoni also the widowed husband receives back part of the dowry if no children were born. In Upare it is believed that a wife may be killed by a spirit of her own clan, and if the diviner pronounces such to have been the cause of death in the case of a young wife, the whole or part of dowry is returnable.

Among other tribes a widower may be given the privilege of acquiring another wife from his deceased wife's family. Thus in Unyamwesi, if a woman dies leaving only one child, the widower receives back half the dowry, or one-third if there are two children ; but in lieu of this he may demand another wife, and if he is given his wife's sister he will pay only five rupees in dowry for her. In Useguha the husband has an absolute right to marry his deceased wife's sister without payment of dowry ; the same rule applies among the Wasove, excepting that the widower cannot claim a right to his sister-in-law. In Sumbwa, again, only a very small sum is paid if the widower marries his sister-in-law, and among the Bakumbi he may demand another wife if he had no children by his deceased wife. In the Bungu and Banjika tribes it is usual for a man to marry his deceased wife's sister, but here it cannot be demanded, and dowry must be paid. In Ukarra, again, it is so much the rule for a widower to marry his sister-in-law that if he does not do so his young children will always be taken over by their maternal grandparents.

Thus, as I had occasion to remark previously, the right to a woman's children is emphasized by the fact that it is very usual for some return or amends to be made to a man whose wife has died without leaving children. Repayment by the husband for death of his wife is not known, excepting in two peculiar instances : in Usove the widower must pay a sheep or a bull to his mother-in-law if his deceased wife had born a child. In Ubena, on the death of a husband or a wife, the surviving party must make the following payments : on the death of a husband the wife must pay one hoe (called "the bone of a man") and three strings of beads for the burial ; the husband has to pay for his wife's death : one hoe for "the bone of a man," one hoe with shaft for "cultivating," five strings of beads for the burial, one ram for the child of which the woman was or might have been pregnant, four strings of beads for penance, and three strings of beads "for your house" (*i.e.*, the

loss to the parental family). The reason given for these payments is that it is believed death has always been caused through some fault of the surviving party.

Widows.

It is at times difficult to distinguish the custom applying to widows and children from that of inheritance, but it would be mistaken to regard widows in the same light as heritable property, merely because it is most usual for the widow to remain with her deceased husband's heir or other relative. Here, of course, it is of great consequence whether or not dowry had been paid in full, for whatever rights were accorded to the husband, the claims of his relatives will not be respected in like degree unless he had paid full dowry for his wife, nor will she consider herself bound to his family as she was to her husband unless the claims of her family were fully satisfied. Hence, in cases where men die without having paid full dowry, a dispute generally arises as to their widows and children. But provided full dowry has been paid, it seems that there is remarkably little variance in the customs of these various tribes in this respect, and I incline to think that original custom nowhere permitted a widow to marry outside her husband's clan or family; in Ukamba, Kikuyu, and Theraka, it is still quite unlawful for the first wife to marry anyone. She must either live alone or with a brother of her husband, or she may take a stranger into her hut, who, however, is merely a mate. The most common rule is that a widow is taken to wife by her deceased husband's brother, but it may be noted that, in Ukamba and perhaps elsewhere also, a man cannot marry the widow of his younger brother, because he stands in the relation of a father to the latter. In Ukarra a widow is asked on the fifth day after her husband's death if she desires to marry her brother-in-law, and if she does, and he also desires it, he will divorce his own wife; if she does not so desire she may marry a stranger, but her children may remain, or later they may go to their father's family.¹ Among the Wadoe and Wakwera a widow may choose whether she will marry a brother or other relative of her deceased husband, but under all circumstances her children remain with their father's heir. In Useguha a man's nephew has the prior claim to marry his widow, if dowry for her was paid by an uncle, as is often the case; and in Unyamwesi if inheritance goes to a nephew, the latter should marry his widowed aunt. Finally, in Sumbwa, Upare, Ukamba,² Kikuyu, and Theraka, a man's sons may marry their father's widows, provided, of course, that they cannot marry their own mothers, and in such case they will also take over the small children of each wife. Among the Bagwe, each son takes care of his mother, and if any one wife has no son she may, if young enough, be given in marriage to an unmarried younger son. Exceptions to the general rule are to be found in Usumbara, Useguha, Ungoni, and among the Wamakonde.

¹ A child born six months after her husband's death is held to be his offspring.

² Although it does occur that young men consort sexually with their father's wives, this is in no way according to custom.

The first two tribes are much mixed with coast blood and have taken up many Moslem practices, but even among them it is more usual for a brother to marry his widowed sister-in-law. The Wangoni are an offshoot of the Zulu tribe, and their customs are in some respects not true to original Bantu practices. The reason for an exceptional habit among the Wamakonde is in this instance explicable because with them children belong to the mother's clan, and by consequence her re-marriage makes no difference. And it is the principle of maintaining the children within their own clan which is the probable reason why widows are not allowed to marry strangers. For the maintenance of the clan and family strength is all important, wherefore it could never be held right that the offspring of one clan should go over to another clan. By consequence, provision has been made for the re-marriage of a widow to a member of her husband's family, lest she should lose her children, who must remain in the father's family. It is also the consideration of her children which will induce a widow to prefer marriage with her husband's relatives.

Notwithstanding custom and common practice, at the present day, widows are very often permitted to marry strangers, but always against return of dowry and the loss of their children, which is not advantageous to the new husband either, for he will consider that he has less chance of rearing up a numerous progeny, which is the ideal of every African. For this reason it will be found that only rarely does a widow desire and find it possible to marry a stranger.

Husband's Right to Children.

As previously related, a full claim to children is established only by payment of dowry in full. Excepting for this, the father has undisputed claim to his children,¹ and this rule applies to legitimate children as well as to those born by his wife of adulterous unions ; he may reject illegitimate children, but if he retains them they have all the rights of his own offspring. As a rule the husband is also entitled to illegitimate children born of his wife prior to her marriage, but in Unyamwesi and Useguha such children are said to belong to the mother, by which is meant that on her death or divorce the husband cannot claim them. Among the Sumbwa and Wabunga, these children are retained in the mother's family, but in Sumbwa the husband may acquire them on payment of a trifling sum. In Ubena, however, all children born illegitimately belong to their begetters.

Divorce.

I know of no direction in which native custom has declined so much as in respect to matters of divorce. In the course of my personal observations I have found that at times the original rules are applied, at times a corrupt practice of the present day, and at other times a combination of both, but I have almost always observed that where the original custom is not adhered to a great deal of confusion arises. Unfortunately, other writers whom I am dependent on for information concerning

¹ Excepting in theory among the Wamakonde (*see ante*).

tribes not known to me, seem not to have gone sufficiently thoroughly into the subject, and I therefore hesitate to put implicit reliance on certain statements made, which savour rather of modern corruption than of original custom.

Divorce may arise in two ways : either the husband may return his wife to her parents—"drive her away," as they express it—or the wife deserts. The former is more rare than the latter. I observe that some writers lay down specific grounds for divorce, but I incline to regard such as the result of attempting to give a European cast to native law and am sceptical of any such fine or hard and fast rules on the subject. Similarly, some accord definite powers of divorce to the husband, wife, parents, chiefs, and elders, but I am sure all that can be said is that the husband alone has a limited right to divorce his wife, so long as he has no child by her, and that any third person who steps in is rather a mediator than adjudicator. In the long run, of course, even primitive men have no method whereby they can compel a woman to live with a man she refuses to remain with, so that if she deserts and faces all the consequences there is no remedy, and anyone who has experience of Africans will know that if the woman claims few rights and liberties, she holds most tenaciously to what she conceives to be her right, and is not near so easily intimidated as is the average native man. In so far, then, a woman can divorce herself, but not by recognized right, nor without penalty, as we shall see. As to her husband, if he rejects his wife, he will be the loser in one way or another, unless he can come to terms with her family.

In every divorce there will be two questions in issue, namely, the possession of the children and return of dowry. As to the first, one rule can be accepted, that the husband has the right to retain his children. Exception to this rule is found among the Wamakonde, with whom children belong in principle to their mother's family, and are therefore retained by the mother. Among the Banjika, also, daughters are taken over by the divorced wife's parents if the husband demands back the dowry he paid, but in either case sons remain with their father. The Wadigo, a much Islamized tribe of the coast, award all the children to the wife, but dowry for the daughters is due to their father, which means that they belong to him, and that the mother only has custody of them ; the Wadigo, however, say that such was not the old custom.

In the matter of divorce there are undoubtedly very strongly conflicting considerations at stake, for on the one hand payment of dowry gives an undisputed right to a woman's children, and clanship constitutes an inseparable bond between father and child, while on the other hand offspring is naturally attached to the mother ; the adult child's affections will always lie more with the mother than with the father (among polygamous peoples), and for practical reasons the young children must remain with their mother. Corresponding to such opposite interests there appears very frequently much vagueness and uncertainty in suits of this sort, where one would look for very definite laws. I have given particular attention to the

subject among some of the tribes I am more familiar with, and I think that certain facts revealed in their customs may shed a good deal of light on the whole subject of the Bantu law of divorce.

In the Kikuyu, Theraka, Kamba, and Chagga tribes, the practice in recent times has been a sort of compromise, the husband getting back dowry in part or in full according to the number of children he retains. In Ukamba, more generally there has been simply a return of dowry, and out of this arise endless complications, because the Mkamba demands back not only the identical stock which he gave to the woman's father, but also their increase; but in the meantime the animals may have been disposed of and in such case the purchasers are required to relinquish them. As previously remarked, dowry stock should not be sold, and consequently the position was more simple. There is, however, always dispute as to whether the husband is entitled to return of his stock with its progeny, if he keeps the woman's children, and similarly among the Wachagga opinions often differ: one day they say this, another day that. Now when a woman deserts from her husband it is almost always because she is enticed away by another man, or if she goes back to her father she will eventually want to marry another man; but after much enquiry I found that in Ukamba the old custom made this practically impossible, for the reason that if the husband rejected return of dowry and the woman or any of her children begotten by her husband, or subsequently begotten by another man, died out of her husband's custody, full blood-money could be claimed from the seducer, and moreover the husband would claim every child born of his wife, no matter by whom. When this custom was revived, it was found that in the first place the wife would not leave her husband, being faced with the prospect of remaining childless, and the would-be husband declined to accept the possible burden of blood-money for an entire family. The result was that nothing came of the affair: the numerous cases of desertion by wives transpired to be due merely to the convenient corruption of recent times, which admitted of women leaving their husbands on the slightest or no provocation at all, without any disadvantage to themselves, and this affords a striking example of the evils of laxity in tribal customs. In Theraka I found the original custom to be the same as in Ukamba, excepting that the husband could not claim blood-money for children born subsequent to his wife's desertion. In Ndia (Kikuyu), the corpse of a child cannot be disposed of without the father's consent, which would of course be withheld if the child had died in the hut of a man who had seduced the mother; if no such consent was obtained, the father would in former times claim blood-money, so that in effect the custom was identical with that in Ukamba. Among the Wachagga I have not found any such custom, but in all cases the deserting wife loses her children, and since dowry is not paid until children are born, no complication can arise if she deserts while still childless. Talking on the subject with the elders, I was told by them that formerly no woman ever left her husband after she had borne him children, and that if she did so, the

husband would certainly seek to kill the seducer. I imagine that similar provision against divorces and desertions may be found in the original customs of most or all tribes. It must be considered how greatly native society is founded in the family, wherefore this foundation would be preserved by many strict rules or religious precepts. Certain it is that divorces were formerly far less frequent than they are now. Asked about this, elders have repeatedly mentioned two causes for the present-day state of affairs : one, the spread of laxity due to Swahili influence, and the other immunity from private revenge, and to this I would add the uncalled for interference in domestic affairs by European officials ; to these, foolish and obstinate women run on the slightest pretext, and, unfortunately, too often receive a ready hearing of their garbled accounts of imaginary wrongs done to them.

It is altogether a regrettable fact that the marriage customs of native tribes have tended to degenerate under European rule. But with this decline follows a loss, not only in morals but in the standing of native women. The ideal native marriage presumes the free consent of the woman ; as a wife she then becomes the mainstay of the village, the provider of comforts, and the idol of her children, for to the African a mother is all in all. Unfortunately, our methods and mistaken conceptions of what marriage is to the native have loosened the ties of matrimony and given it a commercial character. We have freely granted divorces in favour of frivolous girls, and permitted them to run from one man to another, heedless of the bad example thereby set. By no means do I wish to convey the impression that native marriages are generally of this nature ; on the contrary, such are still the exception ; but they are too common, and the tendency is towards further decline of domestic life, and this we must combat with energy by keeping before the native his old and natural ideals.

SLAVERY.

Slavery is by no means known among all tribes, and from the fact that it is principally to be found in the territory which was formerly German East Africa, and where slave-raiding by Arabs and others was conducted on a much more extensive scale than in British East Africa, I conclude that actual slavery has been introduced in comparatively recent times. The savage African would rarely take male prisoners in war, for either the enemy escaped or was killed, consequently slaves captured in war were practically only women and children. But these as often as not became wives, concubines, and adoptive children. Thus among the Banjika the king sold the older slaves but kept the children, and these were received into his family as his own children and enjoyed all the respect due to members of the royal family ; the only difference made being that on the death of the king a few such slaves were buried alive with the corpse. This could, however, not be done with the children of slaves. Otherwise slaves are in all respects free, may

acquire property and in fact are given property, and the master bears the same responsibility for them that he has in respect to his own children.

A curious form of slavery exists among the Bagwe. Here if a man dies without male issue his wife and daughters become the slaves of the king and his property likewise passes to the king. The women lose all liberty and may never marry. Some are employed in the service of the king's ancestral spirits, others become servants to the king's widows.

Slaves may be bought from other tribes, though slavery need not therefore exist among the people from whom the purchase is made, and in such case the seller merely kidnaps and sells some person whom he either dislikes or is not interested in. Thus the Wagirama frequently came to Ukamba to buy slaves, and sold them on the coast, although so far as I am aware neither the Wakamba nor the Giriama have slaves within their own countries. In other tribes parents would sell their children in times of famine simply to save them from starvation, but I think that in such case they could without question be redeemed at any time.

A more common way of slave making was, or is, enslavement for debt or crime. The former is very often voluntary, the latter seems to be rare. Thus among the Wangoni a man may voluntarily become the slave of his creditor or as a substitute for dowry, but subsequent payment of the debt ensures liberation. Among the Wasove a bankrupt may evade all liabilities by giving himself with wife and child to the king. He becomes a sort of court fool and enjoys many privileges. Among the Waziguha and Washambaa enslavement for debt is also customary, but it seems such enslavement is always voluntary. In Upare a poor man may voluntarily become a slave by marrying a woman of a rich family without dowry. His children then belonged to the woman's family, but the slave owned property and could acquire freedom by payment of dowry. His sons were given wives by the master, who took the dowry for all daughters. Such a person is called *mzoro*, and is much in the position of a serf.

We may therefore speak of voluntary and involuntary enslavement. Enslavement for crime is customary among the Wakitusika as, for instance, in adultery, and among the Wapare, where an evil wizard may be killed and his wife and children enslaved by the prosecutor. If the wizard's son was not killed the prosecutor could marry the wives, otherwise he sold them or married them to others and received dowry. If he married them he therewith admitted them into his family, and if they bore sons these were free and had their share of inheritance. Such slaves could not be sold. Among the same tribe a murderer who fled to the chief also became the slave of his protector.

The master had powers of life and death over the slave, but among the Wangoni and Wakitusika appeal could be made to the sultan, and in Sumbwa the king is protector of all slaves; they could not be put to death without his consent, which was not often given. In Upare a murderer who became the slave of a chief could

not be killed, and if the chief were to kill him he would be liable for blood-money. The slave could also be beaten and hired out. But as a matter of fact all these rights would hardly ever be exercised. In general the slave lived in peace and ease. In most tribes he could acquire property of his own, and though his master may have a right to such property, this right is rarely made use of. Among the Wakitusika the master has no right to the property of his slave. Among the Waziguha the slave is given one-third or one-half of the produce of his labour, and among the Wasove the slave is often paid for his labour. The European will as a rule hardly be able to distinguish the slave from his master, so much do they live as equals, and ordinarily one would take the slave to be a child, son or wife of the master. The great distinction here is that the slave may as a rule be sold to another man.¹ On the other hand, the master is as a rule liable for the debts and misdeeds of his slave. This is not the rule among the Waziguha. Among the Wakitusika the master is liable only for debts contracted by a slave with his consent ; in the event, however, of a slave causing the death of another slave, the master has to pay twenty to thirty times the value of the slave killed.² In Sumbwa, Upare, and Ungoni the master is responsible for the debts and actions of a slave.

The slave may marry, and very often the master provides him with a wife. Among the Washambaa and Wasumbwa, for instance, the master either gives his slave a slave woman in marriage or pays dowry for the slave woman of another man. The children of slaves are likewise slaves, and as a rule belong to the father's master. But among the Wakitusika and Waziguha they belong to the mother's master. So also among the Washambaa if dowry was not paid for the mother. We have in these cases a revival of the idea that offspring always belongs to the female unless the father has acquired a right of marriage and payment of dowry.³ It is, however, not uncommon for the master or his son to marry a slave girl or even for a slave girl to marry her owner or his son, and in such case freedom invariably follows. Thus in Useguha the slave woman who is married to her owner's son, and has a child by him, becomes free ; similarly a slave becomes free if he is married to his master's daughter. The voluntary slave called *mzoro* among the Wapare may gain his freedom by paying dowry for his wife. Among the Wasove and Washambaa a slave woman married to a free man ceases to be a slave. Among the Wapare, where a wizard's wife is enslaved, she becomes free if she is married by her master. In the same tribe the children born of a captured female are free and entitled to inheritance from the owner, but children born prior to capture of the mother remain slaves. Among the Wakitusika the children of a slave woman by

¹ But in Usambara a man becoming a slave for debt could not be sold. In Pare a murderer's and wizard's family cannot be sold.

² In Sumbwa the master must pay the sum demanded for a free man, but if his slave kills a slave the slave is given to the owner of the one he killed.

³ See Marriage, p. 248.

the owner are free, and if the father is not the owner, but a free man, he may purchase the children and therewith liberate them. In Sumbwa the grandchildren of slaves are to all intents and purposes free.¹ In Ungoni and Usambara, where a man may become a slave for debt, he can obtain his liberty by payment of his debt, but in such case in Usambura he has no claim to the wife given by the master nor to her children. Among the Wakitusika the owner commonly liberates his slaves, and generally when he feels that he is about to die. The Wabunga are said to frequently liberate slaves for good service.

However we may condemn the practice of slavery among Africans, it affords a striking illustration of comparatively speaking humane instincts in these primitive people, for the terrors of slavery as practised by white men not much more than a century ago were never known to the Africans. It is often difficult for the European to distinguish marriage from slavery in Africa, but this is due less to the lowly position of women than to the surprisingly liberal treatment of slaves. The two estates must however, not be confused, for marriage is an honourable estate founded on free desire ; the other springs from compulsion of one sort or another, and is therefore held in contempt.

INHERITANCE.

The rules of inheritance among these tribes may be grouped under three heads :—

- (1) Inheritance to son or children.
- (2) Inheritance to brother.
- (3) Inheritance to other relatives, generally to maternal relatives. (Inheritance from husband to wife and *vice versa* is unknown.)

To the first of these groups belong the following tribes : Wakamba, Watheraka, Wakikuyu, Wachagga, Wagirama, Wapare, Washambaa, Waziguha, Wakitusika, Wangoni, Wasove, Wabena, Sumbwa, Bagwe, Bakumbi, and Wadoe. To Group 2 belong the Wanyamwesi, Banjika, Wadigo, and Wakarra. Group 3 includes only the Wamakonde, Wakwera and Wabunga.

Thus the majority are formed by Group 1. This may be subdivided firstly into :—

- (1A) Those among whom daughters have a right to inherit ; and
- (1B) Those with whom inheritance goes to males only.

(1A) An equal distribution is rare, and is practised only among the Washambaa, Wakitusika, and Wadoe. Among the Wasove and Wabena the eldest son receives one-third of the inheritance, and the balance is equally divided between the sisters and younger brothers ; among the Bagwe the eldest daughter has a very small

¹ But otherwise a slave can never be liberated in this tribe, excepting he be enslaved for debt.

share of the inheritance, the other daughters none ; practically speaking, however, inheritance is due to the son only.

(1b) Inheritance to sons only is the rule among the Wakamba, Wakikuyu, Watheraka, Wachagga, Wapare, Bakumbi, Wangoni, Sumbwa, Wagirama, and Waziguha. Frequently among these tribes an elder brother is designated as the heir when the sons are minors, but it must be explained that in the vernacular the word for heir is often used in the sense that such and such a one is the executor or trustee, and always it will be found that he has only trusteeship of the property during the minority of the children, it being considered that the mothers, as women, cannot have control of property, and in particular not of stock, which after all is the sum total almost of a native's valuable property. Among the Waziguha, however, for instance, a man's property is always taken over by his nearest male, and after him the nearest female relative, but only for use and trusteeship. The son may demand his inheritance at law ; if there is only one adult son he will take over the property at once, and probably the idea is that in these circumstances he cannot defraud younger brothers. Exceptions in favour of daughters are made among the Waziguha, when there is no son to inherit the property, and among the Washambaa, where a daughter may inherit her mother's property if neither mother's father nor mother's brother is alive. In Ukamba the nominal heir is always the widow ; she has no actual right of disposal to the property, but her consent in its disposal is necessary. This is in practice a merely nominal right of inheritance, but its effect will appear from the following : if a man leaves no adult heir his father takes over the trusteeship, the widow may be married by a younger brother of her husband, but in such case the couple may not live far from the trustee ; thus the woman remains the nominal heir : her husband will have the benefit and her father has the control of the stock. Both in Ukamba and Theraka the stock nominally inherited by a widow cannot pass to a daughter of hers : in absence of other heirs it becomes the property of her clan. A curious practice exists in Kikuyu. If a man dies without male issue his widow may pay dowry out of his property for a girl who is then at liberty to cohabit with any male member of deceased's clan ; her male children subsequently inherit the deceased's property. Barring these exceptions the above-named tribes all award inheritance to the sons in the first instance, and the right of primogeniture obtains in one form or another as the rule. In Pare only the eldest son of each wife receives the stock, and his brothers must look to him to supply their wants ; it is of course customary for all sons to live together, and a division is called for only when they separate, in which event there will always be strife in the matter. Among the Waziguha the distribution is fairly equal, and among the Sumbwa entirely equal. In Ungoni the distribution is according to age. In Theraka the eldest son receives one more of each species of animal than the others. In Ukamba there is no rule, excepting that the eldest son gets more than the rest. In most sections of the Wachagga the rule is much the same ; examples are given as follows :

A has ten cows and three sons, the senior receives two more, the second one more, than the third son ; A has ten cows and six sons, the eldest gets four, the youngest two, and the other sons one cow each.

Among a polygamous people there arises not merely the question of inheritance between elder and younger brothers, but also between the elder and younger sons of several wives. Here the distribution of the portion due to the sons of each wife is generally determined during the lifetime of the father, for a man distributes his stock among his wives, and the sons of each wife inherit their mother's portion, or if, as is the practice in Ukamba, the sons marry any of the wives, they will take the portion allotted to the wives they marry. In such inheritance is included the dowry for daughters of the wife or mother, as the case may be. Among the Wachagga the sons of each wife inherit the mother's portion of the stock. If there is any stock unallotted it is divided between the eldest and youngest son. If a wife has no sons her portion goes to eldest son. Since the senior wife is almost bound to have in her keeping the largest share of the stock, it follows that her sons inherit the major portion,¹ but with other wives the portion may vary, and a man may intentionally make a fair or unequal distribution. In so far one may speak of inheritance by will. In the Rombo country of the Chagga tribe a man will often not tell his sons where his cattle are kept, but will confide it to a trusted friend with instructions as to which lot he wishes each of his sons to have, so that by this means he distributes his property by will ; but it is to be noted that if an elder brother discovered that in this way he had come short, he would simply seize his share from the younger brother who had gained such an advantage.² The Wakikuyu are the only tribe known to me among whom property is distributed by will, but as a matter of fact the will is often followed by many adjustments through the elders. Such rights of disposing of property by will can only be exercised in respect to distribution among the recognized heirs, but I have known of a case in which a Kikuyu bequeathed thirty goats to a Masai whom he had adopted, and it was held by the elders that he could do so, and that without such a will the Masai could not have inherited anything.

In Theraka property is distributed by the elders after a man's death without regard as to how it was allotted during his life.

Among the Wakamba, Wakikuyu, Theraka, the order of inheritance is son, father, brother, uncle ; failing these, the clan. Among the Wachagga a brother is the next heir to the son. Elder brother inherits before younger brother, but among brothers by the same mother, the youngest and eldest brothers inherit from each other ; the youngest son can, however, only inherit from the eldest, while the latter may inherit from a third son, for instance.

¹ The eldest son has a larger share than his full brothers. Thus the right of primogeniture is not to the eldest son of the father, but to the eldest son of the senior wife.

² It happens also that a father may put a curse on such and such cattle if taken by any but a particular son, and so compel the others by fear of taking them over.

Among the Wapare the nearest adult relative takes the inheritance. Under the custom of the Wangoni a brother inherits if there is no son. Among the Waseguha and Wabena a daughter, as already stated. The same is the rule among the Bakumbi. In Sumbwa the next heirs are the sons of a brother, and failing these, the king. In Bagwe the chief takes the property of a man who dies without heirs.

To Group No. 2 belong the Wanyamwesi, Wadigo, and Wakarra. Among the first of these inheritance goes to the son only when there is no brother of the deceased, but when the brother dies the son receives the inheritance. In practice we have here only a delayed inheritance by the son. It would be interesting to learn if the brother is under any obligation to preserve the inheritance for the son, for in such case the actual heir would be the son ; this is a point I have not had the opportunity to ascertain. If there is no son, the daughter receives the inheritance, but if the deceased had not paid dowry for his wife, then a son of his sister becomes the heir and this nephew should marry the widow.

The Digo custom makes the order of heirs as follows : full brother, wife's brother's son, grandson, and failing all these, a son. To this rule there are the following exceptions :—

- (1) The son of an unmarried girl is treated as the full brother of his father's legitimate sons.
- (2) In absence of a brother and, if the wife's brother's son is a minor, the property goes to a son of a sister of deceased's wife for life, but on the latter's death the inheritance reverts to wife's brother's son.
- (3) The Wadigo keep slave women called *Kazangu* (wrongly interpreted as concubine by the Swahili). A son by such a woman inherits before all other heirs and takes the whole of the property, though it is usual for him to give the true heir a small portion. The reason given for this curious custom is that the son of a *Kazangu* has no other chance of acquiring property. When the only heir is a minor the clan takes charge of the property until he is of age. The widow may in such case marry any member of her clan without dowry, but dowry for all her daughters goes to the lawful heir.

Among the Wakarra the husband's property is inherited by his brothers and sisters, the former receiving a large share. The wife's property goes to the children and is divided equally ; if there are no children, the wife's brother takes the property. Everywhere the rule as to wife's property is the same, namely, that it cannot be inherited by the husband.

To Group 3 belong the Wakwere, Banjika, and Wamakonde. Among the Wakwere inheritance goes to mother's brother, but the son of a concubine inherits from his father. With the Banjika the property is said to pass to the most capable

member of the family, who must use it for the needs of the others. I do not know how it is decided which member of the family is the most capable, but I suspect that it is more a question of all property being held in common, and controlled by the most capable one.

Among the Wamakonde a man is said to belong to his mother's clan and, consistent with this principle, inheritance goes in the female line. The main object is to conserve the property to the clan. A strict rule on the subject does not exist, but the normal course is for a man to select as his heir the most capable son of a full sister who was born next before or after himself. In default of such an heir the next entitled is sister's daughter's son, and last of all a brother. In absence of any such heirs some other male descended from a sister is selected. Women never inherit. If no heirs of the first degree are to be found, the man will give dying injunctions as to whom his property is to belong, but if he omits this it generally falls to the one who takes possession first. Frequently the heir marries the widows, the more to stabilize his claim. It is his duty to resign a small portion to the children, but only a very insignificant portion, and it is frequently withheld.

So far as I know there is no difference made between legitimate and illegitimate children among any of these tribes (excepting in Digo, see *ante*), and children of slave women married to the father have equal rights with freeborn children.

Owing to the fact that land is invariably public or family property, the question of inheritance of land hardly comes into question. On the other hand, inheritance of position such as a chiefship is not always regulated by the rules for inheritance of property.

The prevailing rule is that inheritance goes to sons, and among these the senior son has the greater share. In my experience disputes as to inheritance are not common, but this is partly due to the fact that among stock-owning tribes, with whom the question might be more important, the heirs generally live together and hold the stock to a greater or lesser degree in common. Such suits as are brought are generally as between descendants of the heirs who have since separated.

A question which has sometimes been raised is that of inheritance by and from converts to Christianity and Islam. So far I have never found that pagans make any exceptions in regard to such persons, for they go on the sound principle that a change of religion makes no change in respect to a man's rights and obligations. But the matter does become somewhat involved as far as Christians are concerned, because the position of widows is closely connected with the disposal of property. A way out of the difficulty has, however, always been found by a refund of dowry. Any effective tampering with the native law on the subject is to be avoided, and will lead to the confusion arising out of the application of three sets of laws to one tribe.

It must always be remembered that in native society the individual is essentially a unit within the family and clan, both of which claim a certain interest, in that he serves to strengthen while his property augments the wealth of the family or clan.

Therefore it happens that when a man becomes a convert and leaves his home to go and settle among strangers in a distant locality, the clan may step in and take possession of his property. This happens more commonly in the case of converts to Islam, who migrate to the coast, and are to all intents and purposes lost to the tribe. The practice has been misconstrued into a confiscation of property on account of change of religion, but the above will explain that it is really quite a different matter, and in fact from the point of view of tribal interests is justifiable and desirable.

LAND TENURE.

The laws as to Land Tenure among natives must necessarily vary according to the conditions under which the tribe settled, the area available to them, and the nature of crops grown. As illustrating this it may be shown how one tribe follows two systems. The Atheraka, a section of the Wameru, originally settled on the north bank of the Tana River, where their leader allotted land to each family. In course of time the land did not suffice, and a portion of the tribe crossed to the other side of the river. Here land was plentiful, and consequently a division of lands was not necessary. Such is the tradition, and it is noteworthy that the Atheraka have no individual tenure on the south side of the river, while on the north they have.

With the exception of the Wakarra the rule is everywhere, broadly speaking, that everyone has equal rights to forest, grazing, water, fuel, building material, and trees. Where individual tenure exists it is actually only in respect to the right to cultivate the land. In this respect the tribes under discussion may be classed as follows :—

- (1) Those among whom a perpetual title of ownership is admitted.
- (2) Those who only recognize a temporary right of occupation.

(1) Among the former the Wakarra, as always, distinguish themselves in custom from other Bantus. They are a people living on an island, every acre of which is cultivated, and the land therefore has a high value, consequently individual tenure has been evolved and is very pronounced. Every piece of land is privately owned and inherited. The owner may sell his land, but when doing so will consult his relatives in order that they may purchase it if they so wish. The last point is to be noted in view of the circumstances that among all other tribes where ownership exists, it is ownership of a family, and not by an individual, and it seems that the Wakarra, who have departed so much from normal Bantu practice, have at least retained an idea of the family claim to land. Communal use of land arises only under the following circumstances. Grazing belongs ordinarily to the individual owner and each portion is bounded. So long as the grass is high it is individually owned grazing, but as soon as it is cut the various fields become common grazing ; the reason is simply that the boundaries can no longer be respected, and as the

stock is never herded, because the island is free from beasts of prey, the herds roam about at will. Here also we may note that the fundamental idea of common grazing rights has survived in some degree.

Next after this tribe, individual land tenure is most explicit among the Akikuyu, and it has its origin in two ways : the greater part of Kikuyu is formed of a series of sharply defined ridges. The Kikuyu occupation is of no remote period, and extended gradually from Kenya towards Nairobi. The earlier settlements were in what is now Nyeri District. Here the lowlands were purchased from the Derobbo, but these people were driven south or became to a great extent absorbed in the Kikuyu tribe. The highlands were covered with forest, and as the labour of clearing the forest land alone made it valuable, it was clearance which gave title, but land title in this area is not nearly so stringent as elsewhere in Kikuyu, where the land was regularly purchased, ridge by ridge, from the aborigines. The original purchaser became owner of the ridge, often it may be a narrow ridge extending over eight miles or more. Such privately owned land is called *Kithaka*, and is held as common property of all the descendants of the original owner. Though the senior member of the family is designated as the owner he is so only as representative of the family. Any member has the right to cultivate the land,¹ but no individual member has the right to sell it. Such is practically never done, but if any land is sold it must be by consent of all the senior members of the family. To all intents and purposes land is never sold ; in fact, the Kikuyu cannot comprehend a sale of land. The land may be rented to others, and this is commonly done.² Ownership never lapses, whether or not the land is used. At the same time, however, the right of any other person to graze, cut grass and fuel, or make other use of the land excepting for cultivation will never be challenged.

So far as I am aware, the nearest approach in the Kikuyu system is to be found in Upare. Even the word *Kisaka* is used here for land which at any time was cultivated.³ The *Kisaka* lands are owned either by the chief or by families, and are allotted accordingly by the chief or family. Where it belongs to a family it is never sold without consent of all brothers. It remains in the family and is not divided among the members excepting that it is customary for each one to cultivate where his mother cultivated. If the family dies out the land falls to the clan. The chief has no right thereto, although he may appropriate the produce of a field of any man who migrates from his domains. Generally speaking land may never be sold, for a whole family will hardly consent to this. A *Kisaka* which belongs to the chief may be granted by him to a stranger who settles in the land.

¹ Even marriage relationship gives more or less the right to cultivate.

² As much as two sheep per year are paid.

³ I am unaware of any relationship between the Akikuyu and Pare ; the latter tribe seems to me to resemble far more the Akamba, yet I am unable to discern any relationship even with that tribe.

Somewhat similar to this is the system of clan lands among the Wachagga. Here every clan has its own area, but within this each member has his particular banana-grove, which is his own property, as must be the case where permanent cultivation exists. Within recent times the powers of the chiefs have been greatly augmented, and to-day the chief claims the right to allot a plot in the clan lands to anyone who wishes to plant a banana-grove, but formerly he could only call upon the head of the clan to grant the applicant a piece of land. The change has come about owing to the fact that the location of each clan is now controlled by a headman appointed by the chief and not the head of the clan. Banana-groves are never sold, or, if the owner wishes to sell, the clan will give the owner the sum he wants for it, and leave the grove in his possession. Since the introduction of German rule, the chiefs have, however, acquired the power to distribute even banana-groves. The land on which maize and other crops are cultivated in large blocks, and which lie below the inhabited area of the tribal lands, is distributed by the chief and no title is therewith conveyed: the cultivator has a right to the crop only. Similarly in Usambara no right is acquired to land cultivated at some distance from the settlement, and which is used for a limited number of seasons. Here title is recognized only to land permanently cultivated around the village. Such ownership was acquired by original cultivation, by purchase, or, in the case of strangers, by grant from the chief. When the original owner died the land became the property of the family. Such land cannot be sold: any sale would be in respect to the crop only. But both in Chagga and Usambara the land may be used by all for any purpose but cultivation.

In Ukamba most of the land is unowned, but where a man cultivates he acquires a right to the land which never lapses whether he make use of it or not. Such plots are called *Ngundo*, and are inherited by all sons, of whom the eldest alone has any right to sell. The *Ngundo* is, however, often and easily sold (one or two goats) unless it consists of a fertile patch such as is suitable for cultivation of sugar-cane. Here also the right to grazing, water, etc., belongs to all.¹

In Sumbwa, ownership is conveyed by right of cultivation or by grant by the chief of a field belonging to some person who has migrated out of the land. Ownership so established does not lapse because the land is not used. The owner must himself relinquish his claim, or in his absence the chief may give away the land. If a man leaves the country his land falls to the chief. Private land belongs not to the individual, but to the family after the first owner. Among the Wadoe and Wakwere also land is acquired either by cultivation or by grant. It belongs to the family and may not be sold. The same is the rule among the Bakumbi: the land is inherited by all children and cannot be sold.

¹ When a stranger wishes to settle, he must pay a bull to the elders. This is, however, not a payment for land, but is intended for the taking of an oath of loyalty to the settlement.

Among all these tribes permanent ownership of land exists in respect to larger or smaller areas. The land is inherited from the original owner by the family or clan and ceases to be individual tenure. Sale of such land is practically unknown. But the rights of the owner or owners extend only to cultivation.

I now come to Class 2, which includes the tribes among whom no private ownership exists. Among them we may distinguish : (a) those with whom ownership or right extends beyond the period in which the land is actually cultivated ; and (b) those who recognize only a right so long as the land is kept under cultivation. To the former belong the Wangoni, Waziguha, Wabunga, and Wamakonde. Among the Wangoni land ownership is established by initial cultivation, inheritance, and purchase; it is forfeited by prolonged disuse and migration. In Useguha the one who cultivates land first is said to own it, and it cannot be used by anyone unless the owner relinquishes his claim; but if the owner does not use the land, the chief will eventually give it to another. In neither tribe is land sold, for when it is said that in Ungoni land is purchased, any payment made is regarded only as a recompense for the labour expended on clearance by the first owner. Among the Wabunga ownership is acquired by cultivation, but is lost by disuse during several years. Land cannot be sold. The Wamakonde concede a right of use to each village in respect to an undefined area around it. If bananas are planted in a field which is subsequently cultivated by another, the plants remain the property of the one who planted them.

Under (b) come finally the Bagwe, Wabena, Wasove, Wakitusika, Wanyamwesi, and Wadigo. Among the first of these, all land is said to belong to the king, whose subjects use it so long—but only so long—as he pleases. In Ubena also the chief is the sole landowner. It is customary for the descendants of a man to have the use of the land he cultivated. In actual practice, however, continued residence and cultivation is rendered impossible, owing to the habits of the people, who continually move from place to place. In any case land may be taken at any time by the chief or cultivated by another if not used. Among the Wasove and Wanyamwesi and Wakitusika ownership does not exist. only a right of occupation is admitted so long as the land is effectually occupied. The Wasove, however, recognize private ownership to bamboo-groves used for liquor-brewing.

The Wadigo say that all land belongs to God and that to sell it amounts to stealing. Waste land is common property, but crops belong to the owner. As a coast tribe, the Wadigo cultivate coco plantations extensively, and it follows that the plantations are to all intents and purposes private lands, but according to Digo law it is only the trees which are owned, not the land. This law is now more frequently disregarded owing to the circumstance that Indians, Arabs, and other aliens purchase the plantations ; the Mdigo himself, however, never comprehends a complete sale of land or plantations : to him it is never more than a mortgage, and therefore he obstinately claims the right to reacquire his plantation at any time by

merely refunding the purchase price, deeming that the purchaser has had good value for his money, in that during the interval he had the produce of the plantation.

None of the tribes last discussed admits sales of land, and this is the most striking and consistent feature of the Bantu law, that land is unsaleable. It is a rule which, in my opinion, should never be relaxed. Another point which is identical in the laws of all these tribes, is the right of all to use the land for any purpose but cultivation. At the same time it must be explained that such right is limited to the inhabitants of one village, locality, area, or at most to the members of one tribe.

CIVIL LIABILITIES.

Ownership of property can never be forfeited but by voluntary relinquishing : such a thing as the lapse of a right or claim by any other means is unthinkable to the Bantu. To what extent this actually applies would be hard to say, for though, as a rule, the native recognizes that sale of anything includes a transfer of ownership, I have constantly found, particularly among the Wakamba, that the vendor will maintain his right at any time to demand back a beast sold against refund of the purchase price, and so much support will he find that I suspect herein a trace of some original right.

It is therefore natural that loss or theft of an article cannot deprive the rightful owner of his claim thereto. But it is very common for a reward to be given to the finder or person into whose possession it has passed. A few notes on this point may be of interest and possibly apply to tribes other than those mentioned. Among the Washambaa such an article cannot be demanded back by right if the person into whose possession it has passed has expended anything on it, in the way of purchase for example. Among the Wamakonde a fixed reward of one-third of the value is customary ; however, if a man finds a runaway slave girl, and keeps her, she is returned with her offspring, unless these are by a free man. In this tribe an unowned article passed fully into possession of the finder only if found on unalienated land ; if found on the domain of a village a consideration must be given to the senior elder ; if found on private land the landowner claims the find. In Upare, if a sheep or goat found remains with a man until it lambs three times, the finder is entitled to keep one lamb. Among the Bakumbi no reward can be demanded by the possessor of a stolen article ; in Ukarra it makes no difference whether the article was lost or stolen, a reward is due in either case.

Ordinarily, a man who finds anything and does not attempt to discover the owner, will be assumed to have stolen it. Among certain tribes the finder of ivory has to surrender one or both tusks to the chief. So amongst the Wasumbwa, where any article of considerable value found belongs to the chief ; in Usove all ivory belongs to the chief, whether found or hunted. In Ubena the same is the rule, and elephant could be hunted only under permission of the chief ; in Usumbwa the chief

claimed one tusk. In Unyamwesi all ivory belongs to the chief, who rewards the man who brings it to him.

A gift is never recoverable, but it is customary with many tribes for a return gift to be given, and this may amount to a claim, in that it would cease to be considered as a gift if no return were made. Moreover, a gift is usually given as a form of greeting, and if no return greeting were offered, this would be construed as a hostile act.

An agreement between two persons is mostly not binding, and there is no form of redress if the agreement is broken on either side. The extent to which it carries weight depends on the persons contracting the agreement. Thus an undertaking by women is mostly not valid, they being accounted as minors in all transactions. Much in the same position are slaves. An agreement is frequently confirmed before witnesses, not by oath (excepting in such a contract as blood-brotherhood), but by some declaration as, for instance, "by the life of the chief."

It is common when a man contracts a debt, or other loan, to give some security for its payment. We may also speak of actual pawning. Thus in Kikuyu I have known crops to be pawned; in one instance the loan was nine rupees, for which a field was pawned and made redeemable on payment of twenty rupees. Actual loan against recurrent interest is, however, unknown. In certain tribes persons may be given as security, though this is not common. Among the Bagwe a daughter may be given, but she is always married by the creditor, who pays dowry for her. The Mbungu may give his wife as a security, but the debtor may not use her as a wife. Among the Wangoni, however, a wife and child given as security become temporarily the wife and child of the creditor. In Sumbwa and Useguha only slaves are given as securities. In Unyamwesi, again, wives and children may be given and become slaves temporarily. The value of work done by such persons is not deducted from the amount of the debt, for the creditor always has full use of whatever is handed over to him for security. In Theraka, Ukamba, and Kikuyu girls are often given in place of the ordinary blood-money or for other debts, and are supposed to become the wives or children of the claimant, but if they wish to marry someone else the claimant has ultimately only the right to the dowry paid for them. They are therefore to be regarded only as securities. A man may also give himself, his wife and children as security. Thus in Upare and Ubena a poor man who is heavily in debt may beg the chief to pay his creditor, and voluntarily give himself to the chief as a slave until he can pay or is redeemed by his relatives.

The security can always be redeemed, and is then returned with its progeny or increase.¹ There are, so far as I can learn, no exceptions to this rule. The holder has the same responsibility for his security as he would have for any other property given into his care. If a time limit is set for redemption of the security, and this

¹ In Uchagga the creditor returns one calf if a cow given as security has calved several times. In Usambara part of the progeny is returned from sheep and goats, but not of cattle.

expires, it may be sold. Until then it cannot be parted with, but at the same time the holder is not liable for its value if the security perishes, is lost or stolen. The only exception to this rule is said to be customary with the Wanyamwesi, and here the information I have is that in such case the creditor is liable and becomes the debtor for the value of the security ; but as this rule is so vastly different from that of other tribes, I am inclined to doubt it. It is true that in Ukamba, Theraka, and Kikuyu the loss must be reported to the owner, and if it is an animal the skin at least, and if possible the meat, must be sent to him, otherwise the holder is responsible. The same rule obtains among the Wabena, and I think very probably elsewhere, as it is simply a matter of the holder giving satisfactory proof that he has not made away with the property, and without such proof the debtor would be entitled to presume that he had. Among the Washambaa, Wabunga, and Wasove the perishing or loss of the security automatically liquidates the debt, but among the Wapare the debtor must in such case liquidate his debt. Among the Wachagga he must replace the lost security, but the creditor must send him the meat, otherwise he is liable for the security.

The means for compelling a debtor to pay are various. Among the Wakitusika a man may surround his debtor's house with fire until he pays. In Uchagga he may be given permission by the chief to extinguish his debtor's fire time after time until he is simply compelled to pay lest he starve. In many parts the creditor may plunder his debtor entirely, or take what he pleases, or what he is owed. Among tribes with whom slavery is not customary this right does not extend to the taking of women and children. In Bagwe a wife may be taken only with permission of the king. In Unyamwesi the debtor could be seized if he had no dependents, such as wives, sister, and children ; in the latter case the creditor could seize these. In Upare a man could not be enslaved for debt, but he could be bound and taken to the chief, who detained him until he paid one bull. In Sumbwa, if a man is seized for debt with his wife and children, his wife's family will generally redeem her by payment to the creditor of the amount of her dowry, and the debtor's brothers will redeem the children by payment of ten rupees for a boy and eight rupees for a girl ; the debtor himself remains a slave until he redeems himself or dies, but in the latter event, and if his relatives had offered to redeem him, the creditor has to pay blood-money. Among the Wangoni a creditor has the right to enslave a debtor only, but his wife and children will generally go with him. With the Wabunga also a debtor may be enslaved until redeemed, and among the Bakumbi any one of his relatives may be seized. The Mkitusika does not even confine himself to one relative, but will seize several.

Among the Wakitusika a creditor may hinder the burial of his debtor's corpse until the debt is paid. This or similar customs are not known to me elsewhere.

It is often said that a brother and the family are liable for a man's debts. In my estimation this is not quite correct ; there certainly is always a moral obligation

in the family to pay debts, but I have never known it to happen that such a decision was given. On the other hand, the liability of the family and heirs in particular is much greater when the debtor dies, and if he leaves property the heir certainly is under the obligation to pay. It will, of course, hardly happen that a brother who has the means will refuse to pay an acknowledged debt if the debtor is threatened with calamity.

It is not uncommon for a person to stand surety for another. In Upare this is very common, but to all intents and purposes is in no way binding to the surety; among the Wabunga and Wangoni the liability of a surety is extinguished by death. Elsewhere the obligation of a surety is inheritable, and the surety is obliged to pay, but has in such case the rights of a creditor over the person for whom he stood surety.

BUDDHISM IN THE PACIFIC.

[WITH PLATES XV AND XVI.]

By SIR HENRY H. HOWORTH, K.C.I.E., D.C.L., F.R.S.

AMONG the avenues open to us in trying to disentangle the former history and movements of savage or semi-savage races, there is one which has considerable promise but has not been so profitably prosecuted as it might have been, because it raises a preliminary polemical issue on which students are much divided.

When we find certain races, now widely separated geographically, united by definite ties of language, mythology, ritual, etc., each possessing certain special artistic or industrial arts or processes not common to the whole group, but in many cases quite peculiar either in individual instances or in sections of the larger group—the question suggests itself how did these special features arise.

There are two recognized methods of accounting for them. By one school of writers, the exceptional features just named are accepted as the result of independent invention and of home-growth on the part of their possessors, and there the matter rests. I am bound to confess to considerable heresy on this point. The fertility of invention characterizing highly cultivated and educated races, which induces a continual change and growth of the material surroundings of life is a very common experience; but it is very rare indeed among savage races, who are exceedingly conservative and immovable in such matters when left in an isolated position, and when living in the same country and with the same surroundings as their ancestors had done. This conservatism in fact extends to all their gifts and endowments, including language, and I hold, therefore, that wherever we meet with instances of local differences among tribes, otherwise closely allied, the burden of proof that they have arisen *spontaneously* where now found rests upon those who do not recognize, as some of us do, the essential conservatism of these races.

To myself and no doubt to others, a new departure in the arts of life among savages means, in nearly all cases, a movement of the tribe into some other area where the old materials used by their ancestors are not available, and they are therefore bound to modify their methods to suit the new material. This is the case not only with man, but also with the animal world, notably in birds and insects, and even among the very primitive protozoans called foraminifera, when removed to other horizons where “the straw for making bricks” is not available. The normal conservatism in such cases has to give way to the necessity of change and invention.

A second method which is more potent and more common is when a very conservative and isolated race comes into contact with fresh neighbours whose habits

and customs, weapons, tools, furniture and clothing are different from its own. The conservative instinct referred to is then prone to give way before the greater attractiveness or usefulness of the new models, and becomes, as in the gardener's laboratory, a graft in fact from another tree, and a new line of inventiveness is started which is often not a mere copy, but involves a considerable departure from the model. This process of grafting, it seems to me, has been responsible for by far the greatest number of new departures in art and culture by savage races. I propose in the following paper to apply this explanation to a special instance which calls for illumination.

Before doing so, I should like to raise another issue with some of my friends. When they find the same idea existing and materializing in the same way among two different races in two separate areas, they will have it that it is a case of its having occurred in separate areas isolated from each other, both being faced by a similar difficulty, and that we need not invite any borrowing from outsiders to explain it. Here again it seems to me that inductive methods of reasoning from the known conservatism of most savages has been airily abandoned in favour of an *a priori* postulate which is illegitimate unless supported by direct evidence. It means, in fact, appealing to a bare possibility as against a wide experience, which is inconsistent with it. In such cases, it is true, we cannot often secure positive proof. The premises of science are in the great majority of cases not certainties, but probabilities.

It is quite true that when the ideas embodied in human art are very simple indeed, and also very widespread, they probably had a common heritage derived from their earliest ancestry, although now occurring in areas remote from each other ; but directly we deal with specialized objects, involving considerable exercise of ingenuity or imagination, and are face to face with the inertness and torpidity of the mind among isolated savages, we have to take into consideration the incredible variety of ways of solving the same difficulty, when men's minds develop as they become more active.

It is, I hold, *prima facie* improbable that the same concrete idea should have arisen and been adopted by entirely separate races, except in extremely rare cases, and for myself I could not be induced to adopt the theory in question as a *vera causa* until every possibility of a graft having occurred had been exhausted.

I now propose to apply these postulates to an area which has had a fascination for many students, namely, the Pacific Ocean and its myriad islands, and the problems, physical and otherwise, they suggest, and notably the ethnography of the Polynesian and Melanesian races.

The former race (which we are alone dealing with now) is not only spread over an enormous area in the Pacific, but is notable also for the fact that it occupies the most northern archipelago in the ocean in question, namely, the Hawaiian Islands, and also its most southern archipelago, namely, that of New Zealand ; while a large part of the central area of the Pacific is occupied by another race, the Melanesian,

which is very different in physical qualities and in language, and which forms a wedge between these two extreme areas. The Hawaiians in the North are very near akin to the Maori in the far South in their speech, so close akin that it is almost impossible to believe that they spontaneously developed so much difference in their artistic products and aesthetic tastes. The dialects of Polynesian spoken in the two archipelagoes show that those who speak them must recently have lived more close together than they do now. On the other hand, the Maori have a very decided aptitude for certain kinds of ornament and a ready invention which they share with the Melanesians, while the Hawaiians are largely void of it—as are the Samoans, another very typical form of the Polynesian stock.

This has been explained very reasonably by the theory, first, that while the Hawaiians are probably an old race occupying an old habitat, the Maori, as all their traditions go to prove, are very largely a race of immigrants into New Zealand. This view has been supported by a number of other facts, especially the traditions of the Maori, and is not now disputed. Secondly, as is also confirmed by their traditions : when these immigrants arrived they almost certainly found another race, doubtless Melanesians, occupying the islands, part of whom they supplanted or ate, and partly incorporated, while they largely adopted their culture. Here then we have a *vera causa* for the distinction between them which seems reasonable, and of which notable examples occur elsewhere.

The tradition of the Maori brings the immigrants from the Tonga Islands in the mid-Pacific, and this only a few centuries ago, probably in the fifteenth century, while the saga of the Tonga islanders themselves seems to entirely confirm the story. This is now generally accepted, and must be treated as an elementary postulate.

This widespread emigration has not only been shown to be possible, but even easy, with the great *prahs* or ocean galleys and double canoes possessed by the Polynesians before their contact with Europeans, as well as by the nature of the winds and currents in the Pacific, which would facilitate such voyages. These voyages were sometimes accidental and sometimes the result of enterprise. None of the objects which have been brought from the South Seas are more interesting in this respect than the primitive navigating maps drawn up by these seamen, and made in our own time on an ingenious plan of their own.

At all events the very close similarity of the speech of the Maori and Hawaiians is only consistent with their not having lived on two isolated areas for a very long time. If they had been isolated a long time their languages, under the influence of the practice of *taboo* which prevails so largely in the Pacific, would have speedily diverged, certainly in regard at least to their vocabulary. These widespread migrations in the Pacific seem to be also the explanation of the mixed distribution of the Melanesians and Polynesians in our day, and to point to their having, in not distant times, divided this great ocean between them more definitely into two great provinces, the Polynesians in the North, and the Melanesians in the South.

The Maori, therefore, form a good example of the graft which I have referred to, where a race has changed its habitat and settled among another people and has largely profited by adopting its culture. A similar and very notable change involving an exchange of fashions has occurred between Japan and the European nations during the last century.

It is pretty certain that similar grafts have taken place on a considerable scale elsewhere in the Pacific, and notably in the central part of that ocean, where the mixture of the Melanesians and Polynesians has in many cases been an intimate one ; to this I shall return presently.

On the other hand, we find instances like the Samoan islanders, where the Polynesian stock has invaded a Melanesian area and has succeeded in apparently exterminating and supplanting the original inhabitants, without any marked change either physically or artistically ; it is plain also that these grafts may have occurred in early times as well as later, for as I have said, the islanders possessed large ships, most skilfully made and appointed, long before the Spaniards, Dutch, English and French navigators had entered the Pacific and introduced more elaborate methods of navigation. So much for the internal movements of the two great Pacific stocks.

Let us now turn to another method by which culture of a new kind was doubtless introduced into some of the islands not from other places in the Pacific, but from areas outside that ocean.

The existing virtual European monopoly in the navigation of the Indian Ocean is, of course, a very modern fact and dates only from my countryman's (Vasco de Gama) famous voyage.

Before that the Indian Ocean was traversed by very strenuous and courageous navigators who engaged in the allied occupations of trading and piracy. First the Arabs, who from very early times had a great trade taking them to Madagascar, the East African Coast from Zanzibar to the Somali Coast, the Persian Gulf, Western India and the Indian archipelago, and at length in the tenth century had reached the ports of Southern China, spreading their faith far and wide, and also distributing the products of distant lands in many unexpected places, like their relatives, the Phoenicians, did in older times. The famous story of Sindbad the Sailor, the details of which are now more appreciated than they once were, is an excellent proof of the fact here mentioned, and also of its early date, as are the remains of Chinese pottery on the Eastern Coast of Africa, and of other remains elsewhere.

Secondly, the Malays, who from a still earlier date dominated the Bay of Bengal, where their piracies on a great scale were notorious, and who had settlements and colonies in the Malay Peninsula, in Java, Sumatra, Borneo and the whole of the islands stretching southwards to the borders of Australia. They were also skilful shipbuilders of large vessels, and like most seafaring people were very adventurous, and in all probability found their way betimes either accidentally or designedly over

a much wider field than many have supposed, and probably taught the Melanesians many lessons.

These were not all. The Chinese and Japanese were still more notable seamen from early times, and built even larger sailing ships, and their junks, as Marco Polo long ago describes them, found their way far afield in the Indian Ocean and its borders. Both nations in fact were planted on the very borders and shores of the Pacific itself. That they made such voyages quite deliberately, and returned, is perfectly plain, as we shall see, and it would indeed have been strange if they had not done so, for the facilities are obvious. A very slight examination of the map will show how both Japan and Corea are united on their northern side with the New World by an almost continuous chain of islands.

We must not measure the extent of their enterprise in these matters by their doings during the last few centuries, for it became the practice of the Governments of both countries, after the Europeans made their way into their seas, to discourage all distant enterprise among their people, and to seclude themselves. As Colonel Kennan, who spent many years in surveying the North Pacific for the United States, has pointed out, these regulations among the Japanese were very stringent, and even prescribed the use and character of the vessels to be used ; this no doubt did much to paralyze the adventurous voyages of these races in the days before they came in contact with competitors and explorers from Europe. Kennan, who had very special opportunities of judging, for he was surveying officer in these seas for a long time, says that the voyage from China, even as far as to America, could be made without being out of sight of land for more than a few hours at one time. This is not all, as he adds : “ I have no doubt that from the remotest ages and on all shores, fishermen in open boats, canoes, or open caravals, guided simply by the stars and currents, have not hesitated to go far out of sight of land.” At the present moment the natives of the South Pacific islands, he says, “ undertake successfully, without a compass, voyages which astonish a regular seaman, who is not often astonished at anything. . . . A Japanese vessel running up the Kamtschatkan Coast to the Bay of St. Lawrence in Siberia would need, at the utmost, only a single sail but probably less to reach America . . . nothing is more likely than that such voyages were made by fur hunters” He pointedly adds that “ Columbus, when he made his voyage, had only open caravals, while the Japanese junks are entirely closed.” These regulations could not, of course, prevent storm-driven junks from being driven far afield sometimes. The same writer says : “ In 1849, when I was in the Sandwich Islands, I learnt that an American whaler had picked up a Japanese junk about 2,300 miles south-east of Japan, and had sent the people back to their homes, and I can also remember that five years ago two Japanese junks were found among the Aleutian Islands, having been drifted thither by the Kurosiro current and driven by westerly winds. One was picked up at Alaska, which is nearly half-way to San Francisco, and if they had been provisioned might have made the whole journey.”

Another Japanese vessel was wrecked about the year 1832 on Oahen, one of the Sandwich Islands, as quoted in the *Hawaiian Spectator*, I, 296 (see Belcher's *Voyage Round the World*, London, 1843, I, 3). It reports that the vessel had nine men on board who were bringing fish from one of the southern Chinese islands to Jeddah when a storm blew it out into the open sea, where they were driven about between ten and eleven months, until they finally landed in the haven Waiola, in the island of Oahen. The ship was wrecked, but the men were taken to Honolulu, where they remained eighteen months and were then sent to Kamtschatka, whence they hoped furtively to return home, so as to escape the Japanese regulations, which had forbidden the return of their own shipwrecked mariners.

Another Japanese junk was wrecked on the north-west coast of America near Queen Charlotte's Island in the winter of 1833-4, and the numerous crew were murdered by the natives, with the exception of two survivors. They were sent to England by the agents of the Hudson Bay Company and thence to the East, but were not allowed to land in Japan by the authorities.

To go back to much older times. The Jesuit, H. Angelo, who was the first European to land in Yesso, remarks how bold and experienced the islanders were in managing their boats, in which they would undertake voyages of two or three months.

These instances are quoted to show how easily and how frequently such cases of straying vessels losing their way in the Pacific have occurred in modern times. The same conditions imply the same accidents in much earlier times.

This is confirmed by Jarvis in his history of the Hawaiian Islands, who adds that according to the tradition of the islanders, several such vessels had been wrecked on Hawaii before the island was discovered by Europeans.

It seems plain from the facts just mentioned that the probabilities are very great that in earlier times the Pacific was visited by many voluntary or involuntary travellers. Among these travellers we have evidence that they included some of those most indefatigable of missionaries, the Buddhist priests, whose travels in all directions undoubtedly went much further afield than is generally supposed. In this instance we have the most direct and positive evidence, including a notable entry in the Imperial Annals of the L—— dynasty, which was a very reliable State document, that they had visited America, which they called Fusang, and had been able to return in safety. This was as early as the fifth century. Perhaps I may be allowed to revert, on another occasion, to the evidence of the Chinese intercourse with America, as it stands at present. My immediate purpose is with the Hawaiian Islands, and the evidence of Buddhist influence there at a much later time as established by some notable facts.

While writing a new edition of the first volume of my history of the Mongols, which has been out of print for many years, I have had to enlarge at considerable

length on the history of Northern or Tibetan Buddhism, known specifically as Lamaism, to which the Mongols were converted in the sixteenth century. In the fourteenth century a famous reformer named Tsong Kapa introduced great changes into the ritual and the faith of Lamaism, from which he discarded a great deal of the magical and other external elements which had overloaded that faith, and restored it approximately to that professed in the early Christian centuries, and apparently also qualified it on the ritual side with certain changes derived from the Nestorian missionaries.

Externally the Lamaist monks, who had previously worn red caps and mantles, whence the unreformed sect were known as Red Lamaists, were now dressed in a considerable measure in yellow, like the monks in Ceylon, who had followed more closely the fashion prescribed by Sakyamuni, their founder. These latter monks wear no head-dress, but go bare-headed, but this was not feasible in the terrible winter climate of Tibet and Mongolia, where the rigid asceticism of the South had to be mitigated in this respect, especially as the monks were all shaven. The head-gear of the Northern monks differs in shape according to the different sects, and also according to the ecclesiastical status of the wearer. Waddell, in his admirable monograph, has given a plate showing their variation, but all reformed sects wear yellow caps or mitres.

Among these head-dresses there is one type which is very remarkable and quite *sui generis*. It is made in the shape of a high-peaked helmet with a remarkable crest and somewhat resembles the helmets formerly worn by English dragoons, and lately still worn by Prussian ones. Its shape may be studied in Fig. 1, p. 287. It was invented by Zi-bdag ne. ser, and adopted by the first Grand Lama (Waddell, *Buddhism of Tibet*, p. 197, note). In combined shape and colour these helmets are very notably distinct from any others worn elsewhere among the Buddhists, and are nowhere to be found in sculpture so far as I know before the time of Tsong Khapa, who was the founder of the Gelugpa or Yellow Sect of Lamaism.

Waddell tells us that these helmets are only used in Tibet by ecclesiastics of high rank, and in the monasteries specially under the control of the Dalai Lama.

The mantles worn by the Yellow Lamas are also *sui generis*. When Sakyamuni founded his order of mendicant friars he especially prescribed that they should wear old and patched garments in conformity with their vows of poverty, and the patches on them were a notable feature of the cloaks.

The increased wealth and prosperity of the Order, which is now very rich from the abounding generosity of the lay adherents to Lamaism, has very largely led to a mitigation of their asceticism, and they no longer live on alms, as was the case with their forefathers. In this respect they have in fact been closely paralleled by the European monks, especially the larger Orders. But while discarding the asceticism very largely, they maintain its shadow, and still carry their humble staves and wooden bowls, etc.

What is more interesting to us is that they also retain a shadow of their primitive patched garments. The patches do not cover holes, but are make-believe only, and are sewn on in squares and strips as a kind of symbolical emblems of poverty.

Let us now turn to the Hawaiian Islands. The most notable and striking objects which Cook and the other early navigators found in the Islands, and of which they brought back specimens with them, were the cloaks and helmets worn by their gods, their chiefs, and kings. They entirely differentiate them from all other inhabitants of the Pacific, except in the case of one small island in the South, to which we shall revert presently. These cloaks and helmets are the most precious remains of the islands to be found in our museums, and especially in the Ethnographical collection of the British Museum, which is rich in them. The gods are represented by large uncouth and bizarre figures of grim and repulsive appearance, which are also unmatched in the Pacific. The chief features of these gods are, as I have said, their helmets.

The cloaks and helmets here referred to are extraordinary replicas in every feature except the material from which they are made, of the Tibetan ones. Their colour is the same, namely, canary yellow, with ornaments of a square or triangular shape remarkably representing the patches on the similar garments of the Lamaist monks; and I many years ago came to the conclusion that it is quite incredible to believe that these unique objects, which are only found in the Hawaiian Islands among the Polynesians, could have had any other origin than an importation made by some of the Northern Buddhists, whose voyages in the great ocean, as I have shown, are reported by the very reputable Chinese Annals. They could have come from no other source than the Western lands where the reformed Yellow Lamas existed.

They are made of different materials, because these are not found in the Hawaiian Islands, and they had to imitate the colour of their prototypes by copying them in another material, namely, the feathers of birds.

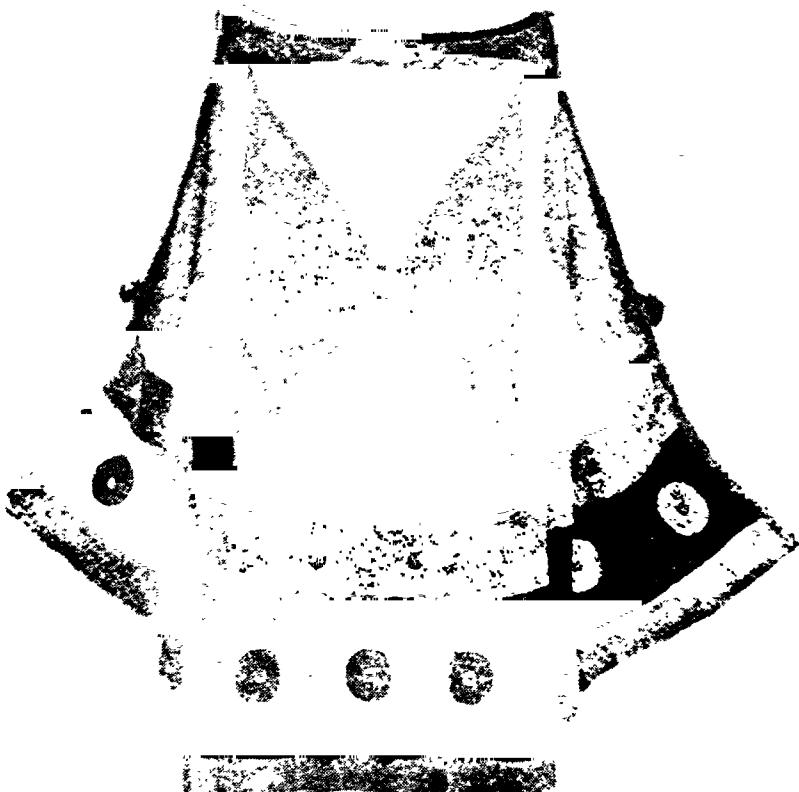
Here again is a notable circumstance, namely, that so far as we know the only birds virtually available for the purpose are two small species of honeysuckers; one is of a brilliant black colour with a tuft of fifteen to twenty feathers in the axils. The natives call it Oo, and its scientific name is *Acrulocercus nobilis* (otherwise called *Mohon nobilis*). The other is of a bright red colour, and is named Iwi by the natives and *Vestiaria coccinea* by ornithologists.¹

The result was that it took a long time to make some of the large cloaks. The tradition is that it took 27,000 of the birds to supply the feathers for one cloak, and they were therefore very precious, and only worn by the great and rich, or by the gods. This points very clearly to the objects not having been of home-growth, but copies of those which had been imported and could only be imitated by a tremendous sacrifice of the small birds, and the consequent preciousness of the imitation, this being the only substitute available.

¹ *Memoirs of the Bernici Pauahi Bishop Museum*, vol. i.



1.—HAWAIIAN WARRIOR, WEARING HELMET: FROM COOK'S "VOYAGES."

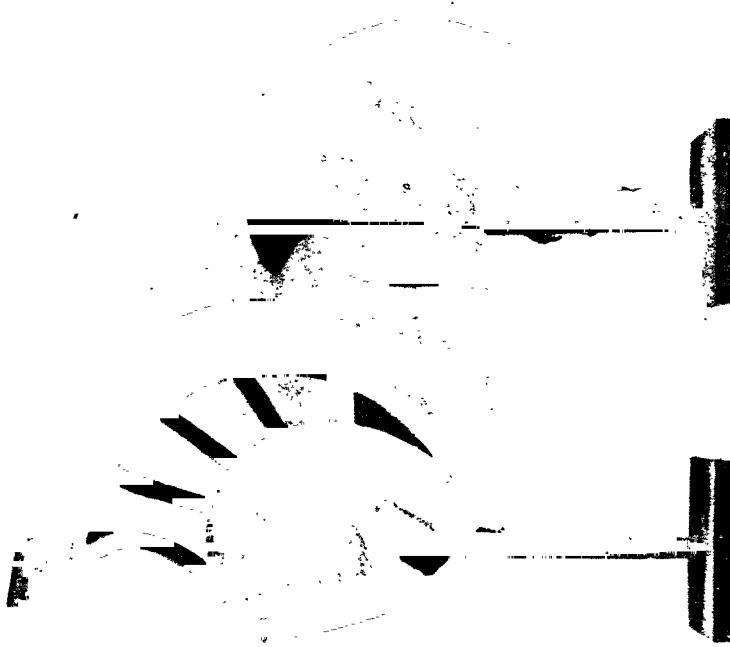


2.—HAWAIIAN FEATHER CLOAK: BRITISH MUSEUM.

BUDDHISM IN THE PACIFIC,



2.—CEREMONIAL MASK FROM NEW IRELAND : BRITISH MUSEUM.



1. HAWAIIAN HELMETS (NO FEATHERS REMAINING) : BRITISH MUSEUM.

This is not all. Though the helmets are not entirely yellow, like those of the Lamas, the cloaks resemble those of the Lamas in a very exceptional feature, namely, in having the imitation of patches simulating the make-believe patches of the prosperous northern ascetics, and the patches are red in colour.

I have mentioned what seems to be a copy of the feather helmets I have described as occurring in New Ireland, where it is used as the head covering of a ceremonial mask, of which I give a figure (Plate XVI, Fig. 2). This seems to have strayed a considerable distance, but is explained by the fact that several Polynesian colonies occur there (see the *Memoir* of the Bishop Museum already cited, page 40).



FIG. 1.—A TIBETAN ABBOT.

(After Waddell)



THE ARCHER'S BOW IN THE HOMERIC POEMS.

AN ATTEMPTED DIAGNOSIS.

The Huxley Memorial Lecture for 1921.

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WHEN I was paid the very high compliment of being invited by the Council of this Society to deliver the Huxley lecture for this year, my thoughts naturally turned to the great scientist in whose honour this annual lectureship was established. A giant among the older biologists, he was characterized by his broad outlook and by the wide range of his scientific pursuits. As a leader in several sciences, he could evaluate facts from a variety of points of view, and was thus peculiarly able to see the bearing of special items upon the more general and important problems.

In these days of ever-increasing specialization, a danger arises from the difficulty of collating the innumerable facts and observations which have been collected by researchers. Generalists in science are growing scarcer, and it will become increasingly difficult to bring together into their true relationship the scattered threads spun by specialists and weave them into a compact and substantial fabric.

In admiring recognition of the brilliant versatility of Thomas Huxley, I am venturing, as a very humble disciple, to contribute towards the solution of a time-honoured problem, by bringing together evidence derived from zoological, archæological and ethnological sources. Incidentally, since the importance of the application of anthropological methods to the study of the classics is becoming more widely recognized, I have been tempted, as an anthropologist, to intervene in the interpretation of certain interesting and picturesque though obscure passages in the Homeric texts.

In offering an essay upon the bow as described by Homer, I am fully aware that many may regard my theme as a somewhat hackneyed one. Attempts to diagnose the Homeric bows have been numerous and have been made from a variety of points of view, chiefly archæological and ethnological; but there still remains much to be said, if we are finally to arrive at a satisfactory diagnosis of the nature and structure of these weapons. In this essay I am offering more detailed evidence in support of a suggestion which I made very briefly some thirty years ago (in 1889), when I was engaged upon a comparative study of certain types of archery-bows.¹

¹ "The Structure and Affinities of the Composite Bow," *Journ. of the Anthropological Institute*, xix, 1890, p. 226. See also Dr. F. von Luschan's *Ueber den Antiken Bogen*, 1898.

There are two principal references to the Homeric poems with which we are mainly concerned in connection with this study :—

- (1) The description of the bow of Pandarus in the fourth book of the *Iliad* (line 105 *et seq.*).
- (2) The description of the bow of Odysseus given in the twenty-first book of the *Odyssey*.

According to Homeric tradition, these two bows were derived from different sources ; that of Pandarus (a Lycian of Asia Minor) was apparently made *locally* for Pandarus himself ; the bow of Odysseus (chief of Ithaca) was given to him by Iphitus, son of Eurytus, king of Oechalia, which most authors have located in Thessaly. How Iphitus came by this bow does not transpire. Thus, although the bow of Pandarus was definitely of Western Asiatic origin, the Odyssean bow had been derived from a Greek source, though we have no direct clue as to the country of its *manufacture*.

In spite of the possibly different *provenances* of the two bows which Homer had in mind, it is well to consider both together, since the two descriptions seem to a great extent to supplement one another, and together help to explain the type of bow referred to by the poet.

In endeavouring to arrive at a diagnostic conclusion, we must bear in mind that Homer, in all probability, was not himself addicted to archery, and that his knowledge of the bow was derived from casual and uncritical observation, rather than from any practical experience. He was a ballad-monger, not a soldier ; an artist, not a scientist ; a romanticist rather than a pragmatist. Hence, in describing even familiar objects, accuracy in detail concerned him less than picturesqueness in expression. A master of epic poetry and narrative, wholly satisfying as such, he yet leaves us longing for details which he might have supplied, and we have to struggle to fill the gaps which he leaves in the archaeological picture. He often, no doubt, describes what he saw, though with an uncritical eye, and his descriptions have a real value to the archaeologist, inasmuch as they afford, at least, suggestive hints of actuality ; and, moreover, their very meagreness, by leaving us unsatisfied, tends to stimulate enquiry on scientific lines.

Of the bow of the Lycian Pandarus, Homer informs us that it was of large size (*μέγα τόξον*) and was made from the horns of a wild goat (*ἰξάλου αἴγιος ἀγρίου*) which were 16 handbreadths in length (*έκκαιδεκάδωρα*) ; that these had been prepared, fitted together, polished and furnished with gilded tips by a skilled artificer (a worker in horn, *κεραοξόος τέκτων*) ; that the bow was kept, when off-duty, in a bow-case (*cf. ἐσύλα τόξον*) ; that the bow string was made of ox-sinews (*νεῦρα βόεια*). When drawn, the bow assumed an extreme curvature (*κυκλοτερὲς μέγα τόξον ἔτεινεν*).

These are points which are germane to our enquiry into the *structure* of the bow, and I omit reference to other incidental points which have no special bearing upon this problem.

The bow of Odysseus, we are told, was also of large size (*μέγα τόξον*), and was kept in a decorated bow-case (*γωρυτῷ, ὃς οἱ περίκειτο φαεινός*). Again, the only material mentioned in connection with its construction is *horn*. In its unstrung state it was reflexed (*παλίντονος*), curved or sinuous (*ἀγκύλα* or *καμπύλα*) ; this is a very important point repeatedly emphasized by Homer. The surface was polished (*εὐξοον*). The bow was exceedingly difficult to string, and part of the test imposed upon her suitors by Penelope was to string the bow as a preliminary to shooting with it. Leiodes failed and so did Eurymachus and others of the younger men, and even the son of the house, Telemachus, did not succeed in stringing this mighty weapon. We may gather that knack, as well as strength, was required for the stringing, since Odysseus strung the bow without effort (*ἄτερ σπουδῆς*), “even as an expert on the phorminx and in minstrelsie easily strains a cord around a new tuning-peg.” In order to render the bow more supple and yielding, the suitors warmed it at the fire and anointed it well with fat. That the bow was very liable to injury from damp and other causes, we may infer from the fact that not only was it provided with a protecting bow-case, but Odysseus never took it to sea with him on his expeditions, always leaving it at home.

These are the chief points in the Homeric rendering to which I wish to call special attention.

Shooting-bows, in general, may be classified into four principal groups :—

- (1) The plain or “self” bow, consisting of a single stave, usually of wood.
- (2) Compound bows, built up by uniting two or more staves of similar materials.
- (3) Composite bows, in which the bow is formed by the union of staves of different materials.
- (4) Sinew-backed bows (a variety of the composite bow), in which increased strength and resiliency are given by the addition of a layer of longitudinally-disposed sinews. This elastic reinforcement is applied to the *back* of the bow, *i.e.* the surface which, in shooting, is furthest from the archer.

It is with the last two groups that I am especially concerned, since, as I pointed out in 1889, such evidence as we have clearly indicates that the Homeric bows were of composite structure reinforced with a sinew-backing.

Let us consider first the material of which the bows both of Pandarus and Odysseus are said to have been constructed. In both cases *horn* is the only material mentioned. In the description of the bow of Pandarus it is specified that the horns used in its construction were those of a wild mountain goat, killed by Pandarus himself, and therefore, presumably, *locally*. The local species of wild goat in Western Asia Minor is the Persian Wild Goat, or Pasang (*Capra hircus aegagrus*), which is and was abundant in the Taurus Mountains, at no great distance from the Lycian home of Pandarus, and is commonly believed to be the parent stock from which the domesticated goats are descended.

If we examine the horns of this wild goat, we readily observe two facts. Firstly, we cannot fail to note that if the natural horns, after being cut off the skull, were merely set base to base and united by means of a centre-piece or "grip" ($\pi\hat{\eta}\chi\nu\varsigma$), as seems to be suggested by several writers upon the subject,¹ the resultant bow, while it might possess artistic qualities and gratify poetic aspirations, would be *entirely useless* for purposes of archery. The horns would be practically unbendable, and would virtually have no resiliency at all, since, as in all the cavigorn ruminants, the

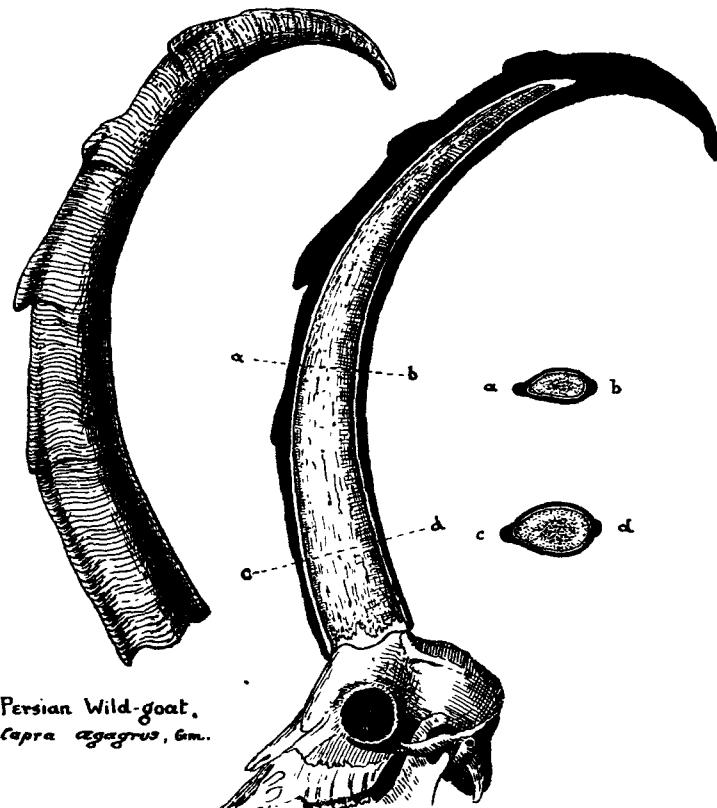


FIG. 1.—HORN OF THE PERSIAN WILD GOAT AND DISSECTION SHOWING THE BONY CORE WHICH SUPPORTS THE HORN SHEATH. *a-b* AND *c-d*, TRANSVERSE SECTIONS THROUGH THE HORN AND THE CORE.

horns of the goat grow upon a central rigid core of bone (Fig. 1). Were they flexible, they would be of little practical use to the goat!

Moreover, if the sheathings of true horn were drawn off their bony cores, the result would hardly be more effective, since, owing to their shape and structure, they would still remain practically inflexible.

Hence we may, I think, confidently rule out the suggestion that the *entire* horns could have been so used, whether with or without their skeletal supports of bone.

¹ Cf. T. D. Seymour, *Life in the Homeric Age*, 1907, p. 668.

Indeed, some more elaborate process of manufacture than that of merely joining together the pair of natural horns is indicated by the statement that a specialist (*κεραοξός τέκτων*) was called in to make the bow.

Secondly, we may notice that if, as was suggested by Colonel Lane Fox in 1877,¹ strips or staves were cut from the horns to make the bow, the resultant weapon would be so weak and flexible that a small child could easily string and draw the bow, which would still be ineffective as a serious weapon. Staves of sufficient thickness and width to serve the purpose *unaided* could not be cut from the horns of a single animal. Only the front and hind narrow marginal ridges would furnish material of any degree of thickness, and even these would be far too thin and narrow (see Fig. 1, transverse sections, *a-b*, *c-d*). That the horns must have been cut down, in *length* at any rate, may reasonably be inferred from Homer's statement as to their length—16 handbreadths each (*έκκαιδεκάδωρα*), equivalent to about 48 to 50 inches, an unusual though by no means unrecorded size for this species of goat. If these, or staves cut from them, in their full length, were united together end to end, the bow would have measured 96 to 100 inches in length (8 feet to 8 feet 4 inches). If it was Homer's intention to convey this impression, we must, I fear, conclude that, in describing the *μέγα τόξον*, or “long-bow,” of Pandarus, the poet was also, metaphorically, “drawing it.”

It has been suggested to me more than once that the fact of Odysseus remaining seated while he discharged his “test” arrow (*ἐκ δίφρου καθήμενος*, *Odyssey*, xxi, 420) proves that the bow cannot have been of great length. But this is not really the case. If an archer were seated upon a bench of the ordinary height, the bow-hand, and therefore the centre of the bow, would, in shooting, be raised about 3 feet 3 inches to 3 feet 9 inches from the ground if the arrow were drawn to the eye; and this would admit of the use of a bow of a length up to nearly 6 feet 6 inches to 7 feet 6 inches, although it is highly improbable that the Odyssean bow attained such dimensions. If the arrow were drawn to the breast, in the manner adopted by Pandarus (*μαζῷ πέλασεν*), the maximum length of the bow would have to be reduced by about 12 inches.

For reasons which I have given, it is impossible to believe that the bow of Pandarus was made of *horn alone*, if it was constructed from the horns of a single wild goat, as stated.

It is true that bows do exist which are made entirely of horn, as, for instance, in India and Java (Fig. 2), but these are made from the huge horns of the Indian Buffalo (*Bos bubalis*), from which staves of far greater stoutness and width may be cut than can possibly be obtained from the horns of any member of the goat family. But even such horn-bows as these are by no means very powerful, and would not test the strength and skill of practised archers. It does not seem possible that a bow possessing the enormous power attributed to that of Odysseus could have been

¹ *Catalogue of the Anthropological Collection*, 1877, p. 47.

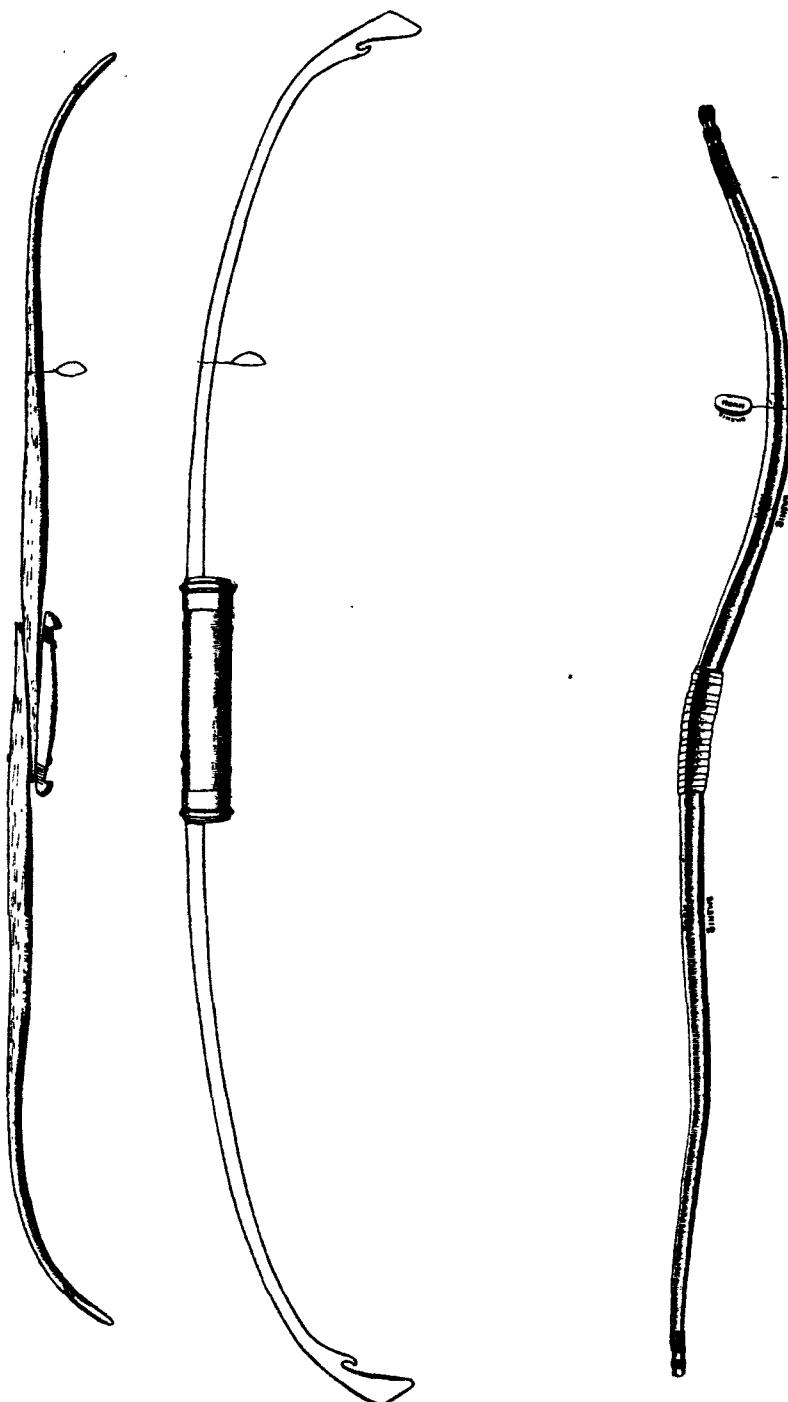


FIG. 2.

Left.—BOW MADE BY RIVETING TOGETHER TWO STAVES OF BUFFALO-HORN : INDIA. LENGTH 38 INCHES. PITT RIVERS MUSEUM.
Right.—BOW MADE BY UNITING TWO STAVES OF BUFFALO-HORN WITH A CENTRAL WOODEN GRIP : JAVA. LENGTH 42 INCHES. PITT RIVERS MUSEUM.

FIG. 3.

SINEW-BACKED BOW MADE FROM THE HORNS OF THE ROCKY MOUNTAIN SHEEP : OSSAGE TRIBE, MISSOURI, U.S.A. LENGTH 38½ INCHES. PITT RIVERS MUSEUM.

made solely of horn, even though buffalo-horn were available, which, though possible, as I shall later suggest, is by no means certain.

Thus, we are driven to conclude that both the bows referred to, while admittedly made *with* horn, must have been reinforced with some other material or materials.

The use of horns and antlers of various kinds in bow-making is very widespread, particularly in the Asiatic region and among the Eskimo and North American Indians. Owing to the dearth of wood suitable for bow-making, the Eastern and Central Eskimo of the arctic New World frequently make their bows from flat laths cut from the antlers of the cariboo (or New World reindeer). These are united together at the centre, usually with rivets. As such bows would be far too weak for effective use, they are invariably reinforced along the back with a continuous lacing of plaited or twisted sinew cord, forming a "backing" of several strands extending from end to end, and braced to the bow at intervals with transverse sinew lashings. When the bow is strung, and still more when it is drawn, the greater part of the strain is taken by the sinew-backing, whose elasticity gives a strong rebound. A fairly useful bow, possessing strength and resiliency, is thus arrived at by the reinforcement of a material (antler¹) which, if used alone, would be ineffective. This form of Eskimo bow is a simple and, as I believe, a primitive type of the sinew-backed composite-bow.

Among the North American Indians (*e.g.* the Sioux, Ossage, Shoshone, Utah and Oregon tribes, etc.) bows made of horn occur frequently, but in this region the true horn of cavigorn animals is usually employed. Many examples of bows made from the horns of the Rocky Mountain sheep (*Ovis canadensis*) have been collected, while, more rarely, specimens made from cow-horn, bison-horn, or wapiti-antler have been noted. These bows are usually, if not invariably, backed with sinews, but they differ from the antler-bows of the Eskimo, inasmuch as the sinews form a layer closely moulded and glued to the back of the bow, of which they form an integral part (Fig. 3). In some of these North American bows the sinew-backing is concealed from view by a protecting covering of snake-skin or other material, so that only the horn is visible externally, and, *at first sight, horn might appear to be the only material used in their structure.*

Improvements upon these rudimentary types of sinew-backed bows are prevalent throughout a vast area of Asia, extending from Siberia through Mongolia, Tartary, Tibet, Corea, Manchuria and China, into India, Persia and Turkey. Throughout this extensive region one nearly always finds that, where horn and sinews are used together in bow-construction, there is also introduced a third material, wood.

¹ Deer antlers, though very commonly designated "horns," are not true horns. Anatomically, they are in reality solid osseous structures deposited from a vascular layer lying immediately *underneath* the skin. They are the analogues (possibly the homologues) of the bony cores of cavigorn ruminants (oxen, sheep, goats and antelopes), and differ materially from the true horns of the latter, which are hollow structures of keratin, deposited as epidermal growths *outside* the vascular layer (or *corium*). Deer antlers also differ from the horns and osseous horn-cores of cavigorn animals in being deciduous, *i.e.* annually shed and annually rebuilt.

Wherever this triple association of materials occurs, the wood is used to form the central core, or skeletal support, of the bow. The horn layer is glued along the “belly”¹ of the bow, and the moulded layer of sinews supplies the “backing” (Fig. 4). This is an admirable association of materials. The wooden staves afford central support together with some resiliency; the horn, being a compressible substance, gives resistingly to the crushing strain imposed upon the “belly,” which becomes strongly concave when the bow is drawn; while the elasticity of the sinews effectively takes the tensile strain thrown upon the “back,” which becomes markedly

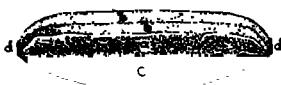


FIG. 4.—TRANSVERSE SECTION THROUGH THE LIMB OF A MANCHU BOW.

a = CORE OF BAMBOO; *bb* = LAYERS OF MOULDED SINEWS; *c* = BUFFALO-HORN; *dd* = THIN STRIPS OF HORN PROTECTING THE MARGINS. ACTUAL SIZE.

convex. For, when a bow is drawn, the “belly” or “ventral” surface suffers compression and the “back” is stretched, to an extent varying with the degree of curvature imposed upon the bow by the action of drawing the bow-string in shooting. Hence, these three materials, so disposed, work ideally together, and a bow of almost any degree of power can be constructed in this way.

The best Asiatic and Turkish bows are built up on these lines (Fig. 4), though many of them, especially in India and Persia (Fig. 5), were *completely* enveloped in thin bark, or other similar protective material, lacquered over, and they do not exhibit externally any trace of their elaborate composite construction, which is

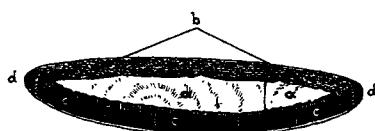


FIG. 5.—TRANSVERSE SECTION THROUGH THE LIMB OF A PERSIAN BOW.

aa = CORE OF WOOD; *b* = MOULDED SINEWS; *cc* = STRIPS OR RODS OF BUFFALO-HORN; *dd* = LATERAL STRIPS OF HORN. ACTUAL SIZE.

only revealed by dissection. The Manchu (Fig. 4), Chinese, Corean, Central Asiatic and Turkish bows, however, are not so completely encased; for, while the sinew-backing and joints are invariably protected with a sheathing layer (usually of bark or leather), the horn remains exposed and can clearly be seen. This point has a bearing upon our diagnosis of the Homeric bows, since in these, too, the only *visible* part of the structure was horn.

¹ i.e. the surface which is turned towards the archer in shooting.

It seems to be more than probable that the poet, uninitiated into the mysteries of practical bow-construction, assumed, from the examples which he had noticed, that the bows were made solely of that material which alone could be seen ; and, *ex pedes Herculem*, from a “ few feet ” of visible horn he conceived, in the Odyssean bow, a weapon of “ Herculean ” strength, being unaware that horn was insufficient unless reinforced.

From the analogy offered by other bows of considerable power in the construction of which horn is used, we *must*, I think, conclude that an elastic “ backing ” of sinews was a *sine qua non*, and that this important structural element is not referred to simply because it was invisible, being overlaid with a protective sheathing, after the fashion universally prevalent throughout Asia in recent times. Without this powerful “ backing ” the bow of Odysseus would have been a relatively feeble weapon, and Penelope’s test of her suitors’ prowess would have sunk to the level of a very “ soft option.”

Even if we accept this seemingly inevitable conclusion, a constructional difficulty still remains and invites suggestion. The bow of Pandarus is, as I have mentioned, described as having been made from the horns of a *single* wild goat. Now, from each horn of the pair only two very narrow staves possessing reasonable thickness could be cut, one from the front and one from the hind margin (Fig. 1, sections *a-b*, *c-d*). The lateral portions of the horn are too thin to prove serviceable. Two of the strips *at least* would be required to equip the “ belly ” of each limb of the bow, and it is very doubtful if these would suffice. But, assuming, for the sake of argument, that two pairs of strips, sufficiently stout and wide to be useful for the purpose, *could* be furnished by a single pair of goat’s horns, and that the “ belly ” of the bow was formed of a pair of horn strips to each limb, after the fashion adopted in making recent Persian bows (Fig. 5) (in which several narrow horn strips are united together to form the “ belly ”); then, judging again by analogy, it is practically certain that, in addition to being glued to the central wooden core and to each other, the strips would also be braced to the bow with a transverse seizing of sinews ; which (like the sinew-backing) would have to be protected from damp by a layer of bark or leather.

But, in this event, *the horn would be no more visible than would the sinew-backing*, and the poet would have had nothing tangible to describe, and must have been dependent upon hearsay for his belief that even horn played a part in the structure.

If, as I think we may fairly assume, the horn layer was exposed to view, I feel compelled to suggest that, possibly, the horn used was not derived from the wild goat at all, but from some other cavigorn ruminant whose horns could furnish staves of the requisite width and stoutness to supply a *single* stave for each limb of the bow.

Two animals seem to offer possible alternatives :—

(1) The Armenian Wild Sheep, or Asiatic Mouflon (*Ovis orientalis typica*),¹ which, like the Pasang, occurs in the Taurus Mountains, and whose horns are of relatively massive build—long, broad and fairly thick. Horns of 40 inches in length are recorded for this species. I fancy that *fairly* serviceable staves could be cut from the horns of this animal, capable of furnishing each limb of the bow with a *single* horn stave ; witness the use made of the horns of the allied Rocky Mountain Sheep in North American bow-making. I suggest that, possibly, a lack of zoological knowledge may have led Homer to confuse the wild sheep with the wild goat, a by no means unnatural error. The story of the killing of the animal by Pandarus himself in the neighbourhood of his Lycian home might still hold good.

(2) The buffalo suggests itself as another plausible alternative. Nearly all recent Asiatic composite bows are “bellied” with staves cut from the horns of the buffalo (the Indian Buffalo, or Arni, *Bos bubalis*). These horns are often of enormous length, up to 6 feet and more, and are capable of furnishing very broad and stout staves. Is it possible that the very powerful bows referred to by Homer were made with the horns of *this* animal ? I am aware that this species is very generally believed to have been confined to India until a relatively recent date, when it spread westward into Asia Minor and elsewhere as a domesticated beast.

At the same time, as has been pointed out by Dürst, Ward and others, one cannot ignore the ample evidence which points to the water-buffalo having been well known in Mesopotamia at a very early date. A. H. Layard² discovered a Babylonian seal of green jasper upon which is engraved the figure of a bovine animal which can be no other than the water-buffalo (either the Arni, *Bos bubalis*, or its prototype *Bubalus antiquus*, or *B. palaeindicus*). W. H. Ward, in his valuable works on Oriental seal-cylinders, gives illustrations of many similar cylinders,³ on which, it is averred, the legendary hero Gilgamesh is represented overcoming, or in one case giving water to, a buffalo (Figs. 6 and 7). The earliest cylinder-seals usually depict the Bison (*B. bonasus*) of the hill-forests ; but on the somewhat later, though still early, examples, from the time of Sargon I (c. 2870 B.C., according to Professor Langdon) onwards, the water-buffalo of the swamps of Southern Babylonia is usually represented, and is distinctly differentiated from the bison. On

¹ *Ovis musimon orientalis*, Brandt ; *Ovis gmelini*, Blyth.

² *Discoveries in the Ruins of Nineveh and Babylon*, 1853, p. 605.

³ *The Seal-cylinders of Western Asia*, 1910, figs. 26, 27, 135b, 156, 161, 163, 167, 172, 176, 180, 183 and 203 ; *Cylinders and other ancient Oriental Seals in the Library of J. P. Morgan*, 1919, pl. vii, fig. 41.

the still later seals the Aurochs (*Bos primigenius*) takes the place of the buffalo. The long, rugose horns of the latter beast, characteristically turned backward over the shoulders, are unmistakably indicated on the seals of Sargon I and his successors.

Dr. J. U. Dürst¹ even mentions a seal of the "Kings of Sirgulla,"² which has been referred to 5000 B.C., upon which an undoubted buffalo is engraved. This

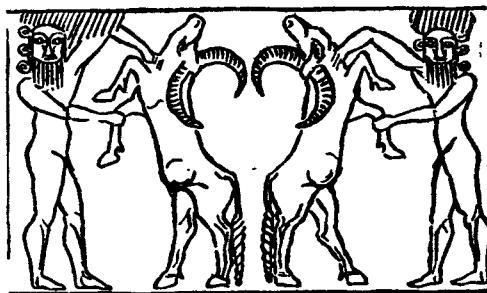


FIG. 6.—FIGURES OF THE WATER-BUFFALO ENGRAVED ON AN EARLY BABYLONIAN SEAL-CYLINDER OF JASPER. (FROM W. H. WARD, *Seal Cylinders of W. Asia*, 1910, fig. 167.)

author is of opinion that the water-buffalo was indigenous in Babylonia as a wild species from the earliest times and that it probably survived until the Assyrian era.

Aristotle (*Hist. Animalium*, ii, 4) alludes to wild bovines in Arachosia (Afghanistan), differing completely from the domesticated type; being black and of



FIG. 7.—FIGURES OF THE WATER-BUFFALO ENGRAVED ON AN EARLY BABYLONIAN SEAL-CYLINDER OF THE TIME OF SARGON I. (FROM W. H. WARD, *ibid.*, fig. 26.)

powerful build, and whose horns were characterized by a marked backward sweep (τὰ δὲ κέρατα ἔξυπτιάζοντα ἔχουσι μάλλον'). This description suggests the water-buffalo rather than any other wild bovine, and there can be little doubt that this is the animal that was referred to by Aristotle in the fourth century B.C.

¹ *Die Rinder*, and also his article on "Prehistoric Bovidae" in *l'Anthropologie*, xi, 1900, pp. 129–158. See also R. Lydekker, *The Ox and its Kindred*, p. 180.

² i.e. Sirpulla or Sirburla (= Lagash), one of the oldest Sumerian cities. The earliest identified King of Lagash is Ur-Nina, who is dated 3000 B.C. by Professor Langdon. The seal referred to by Dürst may, presumably, be referred to the oldest Sumerian culture.

The Sassanide hunting scene, represented in Fig. 15, proves that the water-buffalo still existed in a wild state in Persia during the early part of the seventh century A.D. Among the victims of Khosrau II are two unmistakable buffaloes, one of which has already been wounded by the royal archer.

The ancient figures of the now extinct buffalo (*Bubalus antiquus*) engraved upon rock-surfaces in Western and Southern Algeria,¹ and believed to date back to late Quaternary times, point to a still wider extra-Indian dispersal of a bubaline animal closely akin to the Indian Arni, which appears to have spread into North Africa at an early date.

Dürst² mentions that fossil buffaloes, nearly allied to *B. palaeindicus*, have been found in Italy and other parts of Europe, as far north as Dantzig.

Hence, it is evident that water-buffaloes in a wild state were widely dispersed in early times outside the confines of India, and the possibility of the horns of this

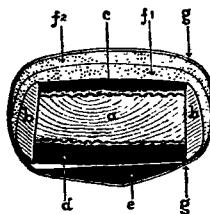


FIG. 8.—TRANSVERSE SECTION THROUGH AN ASSYRIAN BOW FOUND IN AN EGYPTIAN TOMB OF THE XXVITH DYNASTY.

a AND *b* = WOOD ; *c*, *d* AND *e* = HORN ; *f¹* AND *f²* = LAYERS OF MOULDED SINEWS ;
g = OUTER SHEATHING OF BARK. ACTUAL SIZE. PITT RIVERS MUSEUM.

animal having been used in bow-making in Western Asia, and, perhaps, also in Eastern Europe, seems far from remote.

Moreover, a bow of elaborately composite structure, probably of Assyrian origin, was discovered in Egypt in a tomb of the XXVIth dynasty. This bow I partially dissected to ascertain its structural details, and it proved not only to be backed with layers of sinews, but also to be fitted along the "ventral" surface with broad staves of black horn which I believe to be buffalo-horn.³ A transverse section of this bow is shown in Fig. 8.

At least, we may admit the *possibility* of *buffalo-horn* having been employed in the construction of such bows as that associated with Odysseus, the enormous strength of which would be rendered more credible by this supposition (assuming, of course, that there was also a powerful backing of sinews). I know of Manchu bows, com-

¹ A. Pomel, *Carte Géologique de l'Algérie*, 1893; *Monographies de Paléontologie*, 1893. G. B. M. Flamand, *l'Anthropologie*, iii, 1892, p. 145, and xiii, 1902, p. 510. Gautier, *ib.*, xv, 1904, p. 495. L. Péringuey, *Trans. S. African Philosophical Soc.*, xvi, 1906, pp. 404, 405.

² Quoting Von Baer, 1823, F. Romer, 1875, and Rutimeyer, 1875.

³ This bow I obtained from Professor Petrie and gave to the Pitt Rivers Museum. I described it fully in the *Journ. Anthropol. Soc.*, xxvi, 1897, pp. 210–220.

posed of buffalo-horn, wood and sinews, which would probably have defied the strength and skill even of Odysseus himself, or of Teucer, the Salaminian, or the Trojan Philoctetes !

To be sure, the acceptance of the suggestion that it may have been the horns of the buffalo and not of the goat which furnished an important element in the structure of these Homeric bows, involves the repudiation of Homer's picturesque tale of the hunting of the wild mountain goat by Pandarus and the use made by the latter of his trophy. But I have already pointed out the practical difficulties

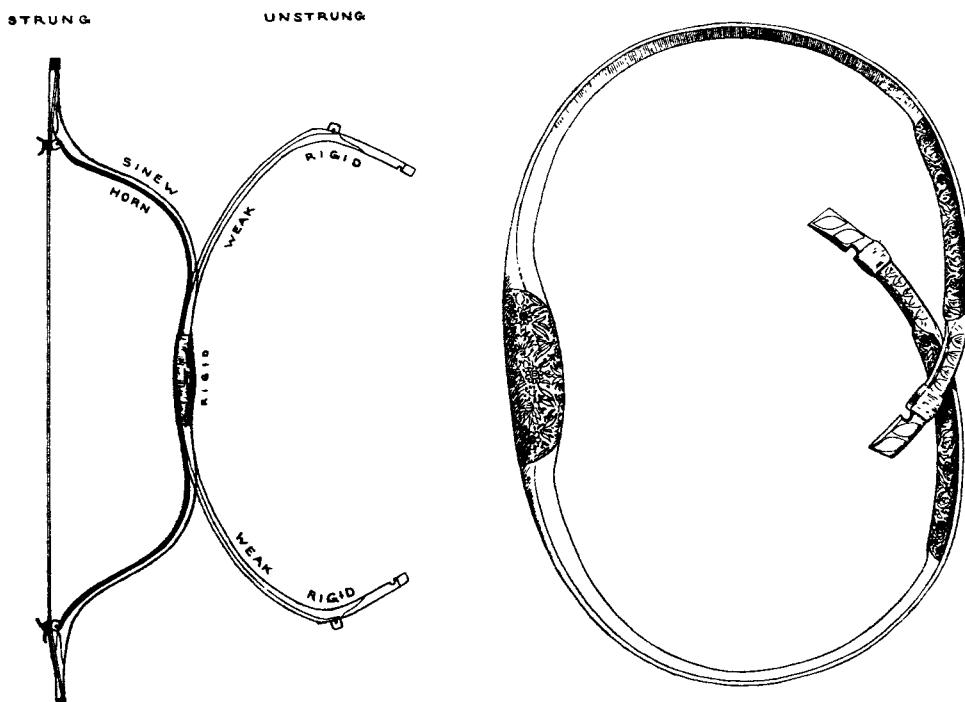


FIG. 9.—TATAR COMPOSITE BOW, SHOWING THE SHAPE ASSUMED IN THE UNSTRUNG AND IN THE STRUNG STATE. C. $\frac{1}{20}$. LENGTH (STRUNG) 65 INCHES. PITT RIVERS MUSEUM.

FIG. 10.—PERSIAN COMPOSITE BOW, EXHIBITING EXTREME REFLEX CURVATURE IN THE UNSTRUNG STATE. C. $\frac{1}{5}$. PITT RIVERS MUSEUM.

which militate against acceptance of this poetical embellishment and call for an alternative rendering.

Whatever the particular kind of horn employed may have been, I think that there can be little doubt that the bows of the Homeric sagas were *composite, sinew-backed* bows of the Asiatic type. Apart from the reasons which I have already given, there are others which lead one unmistakably to the same conclusion.

The frequent repetition of the expressions *τόξον παλίντονον*, *ἀγκύλα τόξα* and *καμπύλα τόξα*, as applied to the bow in its *unstrung* state, shows that the

bow of Odysseus, at any rate, was reflexed when in a position of rest; and the emphasis laid upon this characteristic suggests that this reflexed curve of the unstrung bow was a very marked feature.¹

Æschylus (525–456 B.C.) mentions the Σκυθικὰ βέλη παλίντονα in his *Choephoroi*, 160, i.e. the “reflexed Scythian bows,” βέλη being a periphrasis for τόξα, the bow being identified with its missiles. Scythian archers (*τόξοται*) appear to have been employed as police at Athens from 480 B.C.² Sophocles (495–406 B.C.) also refers to παλίντονα τόξα (Tr. 511). The terms ἀγκύλα and καμπύλα are also applied to bows which were strung and ready for use, so that these adjectives may refer to bows whose outlines were sinuous both in the unstrung and in the strung state.

Now, this backward-curving of the bow in the unstrung state is a feature peculiarly associated with bows of *composite* construction, and is rarely seen, and usually only slightly marked, in single-stave and compound bows. Nearly all the Asiatic



FIG. 11.—BOW EXHIBITING THE “CUPID'S BOW” FORM.
ON A COIN OF PHILETAERUS OF PERGAMUS.

composite, sinew-backed bows are reflexed (*παλίντονα*), some of them to a very remarkable extent, which would not be possible in bows of simple structure (Figs. 9 and 10). Usually, when *strung*, these bows assume the well-known “Cupid's bow” curvature (Fig. 9), a shape frequently represented in ancient Greek art; this fact indicates a familiarity with bows of composite structure (Fig. 11).

Another point to be noted is the statement κυκλωτερὲς μέγα τόξον ἔτεινεν, in the description of the drawing of his bow by Pandarus (*Iliad*, iv, 124). The term κυκλωτερὲς suggests that the bow, when fully drawn, was strained almost into circular form; a poetic exaggeration, no doubt, but evidently intended to convey the idea of a very high degree of curvature, such as well-made *composite* bows can

¹ Cf. *Iliad*, viii, 266; x, 459; xv, 443; *Herodotus*, vii, 69.

² Cf. T. G. Tucker, *The Choephoroi of Æschylus*, 1901, p. 46.

well sustain, while bows of simple structure would break under the strain involved in such extreme bending. We may compare Virgil's account of the shooting of Arruns by Diana's "valkyrie," Opis (*Aeneid*, xi, 859–861) :—

“Cornuque infensa tetendit et duxit longe, donec curvata coirent inter se
capita. . . .”

Here we note the same exaggerated bending of the bow “till the ends met,” which is comparable to the *κυκλοτερὲς* of Homer. It is noteworthy that in this passage (as also in *Aeneid*, xi, 773, “spicula torquebat Lycio Gortynia cornu”) the word *cornu* is used for bow, instead of *arcum*, suggesting that the bows in question were made of, or, more probably *with*, horn. Compare Ovid (*Met.* iv, 303) “flectentem cornua.” In like manner, Anacreon (Ode III) uses *κέρας* as equivalent to *τόξον*—*κέρας ἀβλαβὲς μὲν ἡμῖν, σὺ δὲ καρδίην πονήσεις.* So, too, Homer (*Iliad*, xi, 385) *κέρας ἀγλαὲ*, and Theocritus (25, 206).

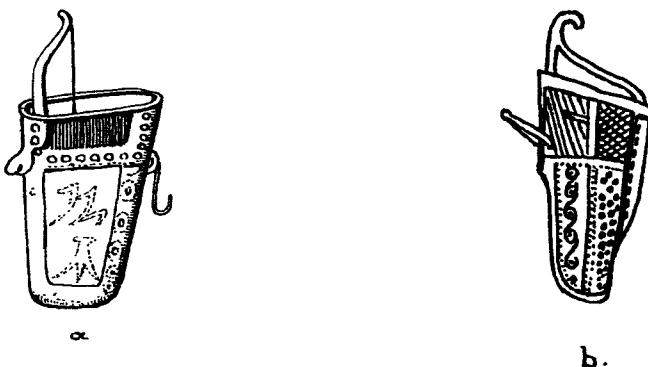


FIG. 12.

a—BOW IN BOW-CASE. ON A SILVER COIN OF ERYTHRAE. *circa.* FOURTH CENTURY B.C.
b—BOW IN BOW-CASE. ON A SCYTHIAN VASE FROM CHERTOMLYK, S. RUSSIA.

Again, as I have already quoted, the bows both of Pandarus and Odysseus were kept, when “off-duty,” in special bow-cases. This also suggests very strongly that these bows were of composite construction, since the use of a protecting bow-case prevails wherever composite bows are employed (among the Eskimo, American-Indian and Asiatic peoples), while a bow-case is but rarely associated with a single-stave bow. Among Asiatic archers the bow-case is frequently beautifully decorated (*cf.* *γωρυτὸς φαεύός* of the *Odyssey*). The bow-case, which sometimes held the arrows as well, is referred to by various Greek and Latin authors under the names *γωρυτός, τοξοθήκη, corythus*, and where it is represented in painting or sculpture, the bow contained in it is clearly a *composite* bow, as judged by its shape (Fig. 12).

That Odysseus *did not care to take his bow to sea* with him on his travels (*Odyssey*, xxi, 39) may, perhaps, have been due less to his sentimental desire to preserve it as a memento of his dead friend Iphitus (as stated by Homer), than to the practical

necessity of protecting this delicate weapon from deterioration by damp atmosphere, by which composite bows are specially liable to be affected.

Further, the bow of Odysseus was, at the suggestion of Antinous, subjected to special treatment—warming and greasing—in order to render it more supple and amenable (*τόξον . . . θάλπων ἔνθα καὶ ἔνθα σέλαι πυρός*). This also is reminiscent of the careful preparation undergone by Asiatic composite bows, whereby the horn was softened and supplied by heat and the sinews were rendered fully elastic.

Odysseus himself examined the bow very carefully, testing it to see if perchance boring grubs had eaten into the horn (*πειρώμενος ἔνθα καὶ ἔνθα, Μὴ κέρα ἵπες ἔδοιεν*, line 394). If one may judge from the remains of ancient composite bows found in Egypt, the horny portions of their structure were specially liable to insect attacks. In some instances the horn has been entirely eaten away. The sinews

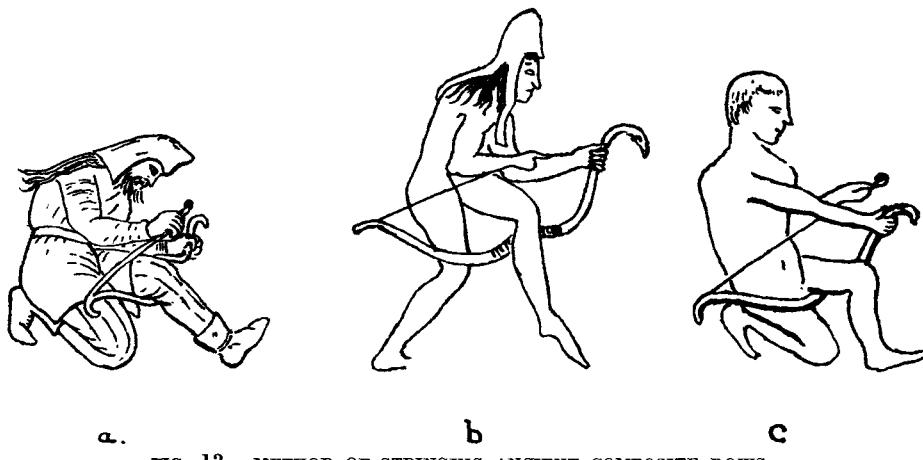


FIG. 13.—METHOD OF STRINGING ANCIENT COMPOSITE BOWS.

a—FROM A SCYTHIAN ELECTRUM VASE FROM KUL OBA, NEAR KERTCH.

b—FROM A GREEK PAINTED VASE IN THE LOUVRE. c—FROM A THEBAN COIN.

also, though to a lesser extent, were attractive to insects, the wood alone seeming to have resisted their attentions.¹

The fact that considerable knack, as well as strength, was required in *stringing* the bow of Odysseus, is another point in favour of composite construction, as it is certain that greater skill and dexterity are called for in stringing the strongly reflexed Asiatic bows, than are needed for any bow of simple or “single-stave” type. I can speak from experience and know how difficult and risky it is.

If we compare, as Anuchin² has done, the prevailing method adopted by Oriental archers in stringing bows of composite build with some of the Ancient Greek renderings of the process as applied to bows of *similar shape*, we see at once that the action was similar. The figure on the famous Kul Oba vase of a Scythian archer stringing

¹ See my paper in the *Journ. Anthropol. Inst.*, xxvi, plate ix; also Von Luschan's *Ueber den Antiken Bogen*, 1898, p. 193.

² *Luk i Strely*, Moscow, 1887, p. 23.

his bow, shows the bow crooked between the legs, the upper end being forcibly drawn back to meet the loop at the end of the bow-string (Fig. 13, *a*). Compare with this the figure taken from a painted Greek vase in the Louvre (Fig. 13, *b*), and with that on an Ancient Theban coin (Fig. 13, *c*), and it will be noted that the method is the same in all three cases. This is not the process usually applied to bows of simple construction, but it has prevailed among the Eastern users of the *composite* bow,

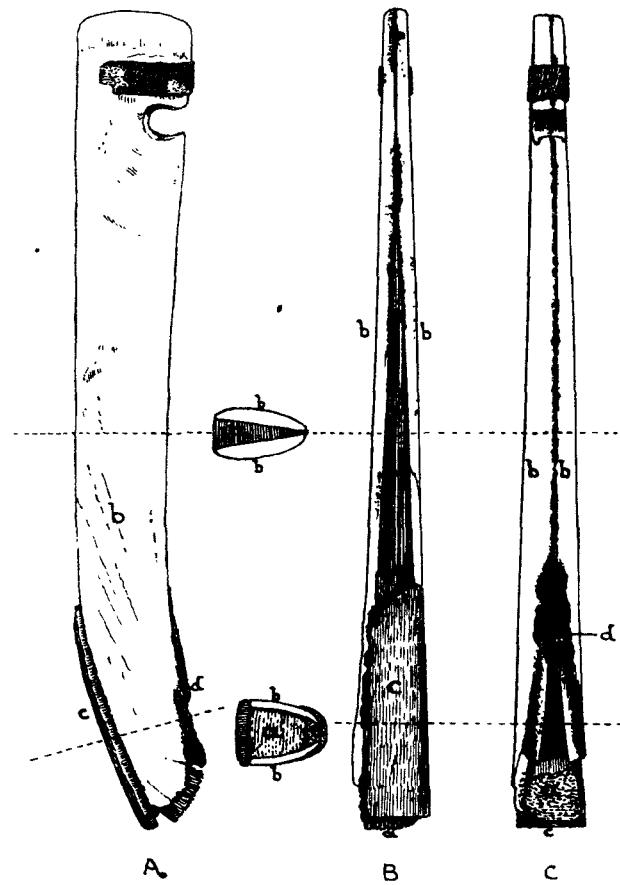


FIG. 14.—ONE END OF A BROKEN BOW, PERHAPS OF PERSIAN ORIGIN, FOUND AT BELMESA, EGYPT. (ROMAN PERIOD.)

A, LATERAL VIEW; *B*, VENTRAL VIEW; *C*, DORSAL VIEW.

a = WOODEN CORE; *bb* = PLATES OF BONE ENCASING THE CORE AND BEARING THE NOCK;
c = STAVE OF HORN COVERING THE VENTRAL SURFACE; *d* = REMAINS OF SINEW-BACKING.

who were able to string very powerful bows in this manner, though considerable dexterity was required.

These are the principal reasons which lead me to urge that the two bows specially referred to by Homer were *not constructed of horn alone*, the only material mentioned, but were of composite build, in which horn, wood and sinews were combined as essential component elements. This diagnosis is the result of a comparative and

anatomical study of ancient and modern bows, and on archæological, ethnological and zoological grounds this conclusion seems to me to be inevitable.

That the Greeks, and, for that matter, the Etruscans and the Romans, were familiar with exotic types of the composite bow, is evidenced by their having frequently depicted bow-forms, which can only have been practical if a sinew-backing were employed as reinforcement. Presumably, these composite types were derived from the Asiatic region—from Asia Minor, Mesopotamia, Persia or Scythia. The latter region appears likely to have been an early distributing centre for the composite bow, southward and westward, since the Scythians were particularly famous as archers and undoubtedly used this type of bow. Cyaxares (634–594 B.C.), King of Media, is said by Herodotus (i, 73) to have retained at his court certain Scythians in order that they might give instruction in the use of the bow.¹



FIG. 15.—KOSRAU II (CHOSROËS), KING OF PERSIA, HUNTING BUFFALOES, ETC. FROM A SASSANIDE DISH IN THE CABINET DES MÉDAILLES, PARIS. (*Revue Archéologique*, XL, 1902.)

A fragment of a composite bow, dating to the Roman period, found at Belmesa in Egypt, was given to me by Professor Flinders Petrie in 1897 for the Pitt Rivers Museum. This fragment testifies to the influence of the northern type of bow upon that of the Persians. It consists (Fig. 14) of the nock-bearing end of a bow, built up with horn, wood and sinews, overlaid with plates of bone, and differs markedly from the developed Persian bows of later times, but corresponds closely with a representation² of a bow in the hands of King Chosroës II (Khosrau II), who

¹ At a date later than the Homeric sagas, in 512 B.C., Darius, the Persian King, invaded Greece from Persia, and reached the lower Danube during his so-called "Scythian" invasion. Later on, Megabazus, one of his generals, conquered the Thracian sea-board, and Macedonia came under the Persian rule.

² On a Sassanide dish in the Cabinet des Médailles, Paris; *Revue Archéologique*, xl, 1902, p. 242.

conquered Egypt early in the seventh century A.D. (Fig. 15). This type of bow shows affinity with bow-forms which are characteristic of N.E. and Central Asia, particularly with Chinese and Manchu examples. Those vaguely defined and imperfectly identified people, the "Scythians," if not themselves of Mongolian origin, at least appear to have had contact with the Mongolians of Central Asia, and we may reasonably assume that their type of bow was influenced by that of peoples living further to the East and North. The wide overrunning of the Asiatic regions by the Scythian raiders probably was a material factor in spreading both their fame as archers and their characteristic type of bow.

The peculiarly *unequal curves* of the two limbs of the Scythian bows were noted by the Pontine geographer Strabo¹ (about the beginning of our era), who compared their outline, when strung, to that of the Black Sea; the two large unsymmetrical

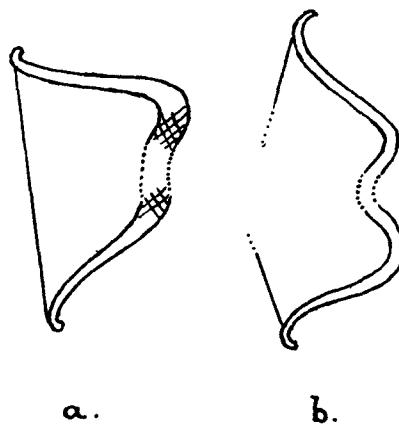


FIG. 16.—BOWS WITH UNSYMMETRICAL CURVES.

a—FROM A REPRESENTATION OF AN AMAZON ON A GRECIAN VASE FROM CANINO. BRITISH MUSEUM. (*Archaeologia*, XXIX, p. 139.)

b—FROM A FIGURE OF HERCULES PAINTED ON A GRECIAN CRATER. (REICHEL, "HOMERISCHE WAPPEN," 1901, p. 54.)

northern bays of which resembled the curves of the bow, while the relatively straight southern coast suggested the bow-string. Others² have likened the Scythian bow to a very early form of the Greek *sigma*, in which the curves were unsymmetrical. This asymmetry is indicated in many of the ancient Greek pictorial renderings of the bow, in which the two limbs of the bow are represented as having unequal curvature, one limb being more strongly flexed than the other (Fig. 16, *a* and *b*). Figures of Hercules occur on Theban and other coins showing a bow of this asymmetrical composite form, and it has been suggested by Rich that this may be the bow received by Hercules from the Scythian shepherd Teutarus (Fig. 16, *b*). Theocritus (*Idyll*, xiii)

¹ II, v, 22. Cf. Ammianus Marcellinus, *Rerum Gestarum*, xxii, ch. 8.

² Cf. Rich, *Dict. of Roman and Greek Antiquities*, 1873. Athenæus, quoting Agathon compares it with the Greek Σ, but the particular form of this letter is not stated.

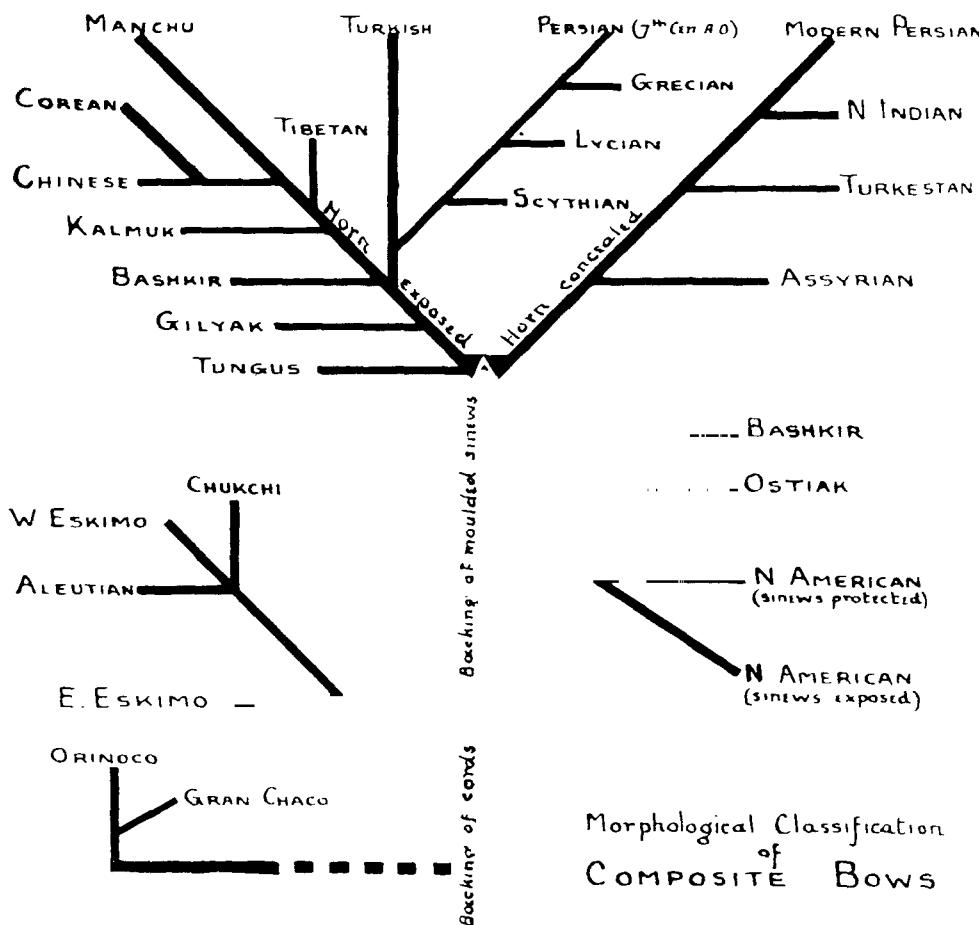
suggests that this was so. This asymmetrical curvature, which is very commonly noticeable in the Asiatic composite bows of recent times, was, I believe, not intentional, but due to the difficulty of building up the two limbs of a bow of composite structure so as to give them *exactly* equal strength and flexibility.

It is significant that the most renowned archers among the Greeks had their homes near the sea-coasts, and were, therefore, specially accessible to foreign influence. Odysseus inhabited Ithaca, Philoctetes, Mount Hermaeus and Lemnos, Teucer Salamis, Meriones Crete.

To sum up briefly: from the evidence which I have given, and which could easily be elaborated further, I think that we must assume that the Homeric bows specially referred to were of the Asiatic type, having a central supporting core of wood, a stout layer of horn glued along the "ventral" surface, and a powerful "backing" of longitudinally disposed sinews. That only the horn should have been visible externally is perfectly in keeping with the practice of the bow-makers of Central and Northern Asia, and also of Turkey, who leave the horn exposed, while covering and concealing the more delicate sinew backing and the lateral margins of the bow with a protecting sheathing of bark or leather. If Homer only refers to that material which could be *seen*, and was unaware of the other essential structural details, we can hardly blame him—a poet among a people whose practice of archery was relatively limited—since in far more recent times a similar omission to refer to the sinew-backing may frequently be noted in descriptions of Turkish and Persian bows,¹ in which allusion is made to the horn but no reference is made to the sinew reinforcement, although the latter was certainly an essential feature in the structure of *these* bows. The poet's lack of detailed knowledge of bow-construction is paralleled by a similar ignorance exhibited by artists in all ages, whose toxographic errors form in themselves a curious and interesting subject for study.

Finally, the probability of the reflexed "horn" bows referred to by Homer having had an Oriental parentage, seems, as some have suggested, to be reflected in the legendary origin assigned by the Greeks to the bow and arrows. According to Pliny (*Hist. Nat.* vii, cap. 57), the Greeks attributed the invention of these weapons alternatively to *Scythes*, son of Jupiter, and to *Perses*, son of Perseus ("Arcum et sagittam Scythen Jovis filium, alii sagittas Persen Persei filium invenisse dicunt"). The names of these legendary inventors have a familiar ring in connection with ancient archery, and suggest very strongly that the origin of the myth may be sought in the actual derivation of the Greek composite bow from the Scythians or the Persians, two peoples who were especially renowned in antiquity for their skill in archery.

¹ e.g. Barbosa (1514) describes a "Turkish" bow seen at Ormuz, Persian Gulf, as "made of buffalo's horn and stiff wood, painted and gilded." Similar incomplete descriptions could be quoted from much later writers.



Below A the bows are of wood or horn.
Above A the bows are of wood and horn.

FIG. 17.

HETERODOX TRIBES OF ASIA MINOR.¹

By the late F. W. HASLUCK.

I.

§ 1. INTRODUCTORY.

PROFESSOR VON LUSCHAN, in his Huxley lecture on *Early Inhabitants of Asia Minor*,² has done much to bring order into our ideas of the still insufficiently known ethnological and religious divisions of that country. His studies are based mainly on his personal observations, and his point of view is for the most part that of a physical anthropologist. His predecessors in field work, dealing generally with narrower areas, have produced a great mass of literature, scattered or in some cases difficult of access, and no serious attempt has been made to approach the problems involved from the historical side. It therefore seems worth while at this stage to bring together the scattered material of explorers and collate with it such historical information as may be gleaned from printed sources, with the object of presenting in one view a summary of the facts at our disposal and the problems they suggest for the investigation of future explorers in the history, and particularly the religious history, of Anatolia.

European travellers in Asia Minor, mainly classical archæologists and very seldom orientalists, are generally better acquainted with Christianity than with Islam. Consequently, the divisions of the Christians are more obvious to them than those of the Mahomedan populations. By most the latter are regarded as a single whole, and any divergence they may notice from orthodox *Sunni* practice suggests to them that the population in question has been affected by Christianity, that is, it represents an originally Christian population half-converted to Islam. This

¹ [My husband left this article in an unfinished condition. Shortly before his death, he expressed a doubt as to whether it should be published, but as illness and war conditions had separated him for more than three years from his MS., he spoke from memory only. It has seemed to me that Part I could be published as it stood and that a little editing, mostly in the form of re-arrangement, would render Part II also suitable for publication. This has been done, but as my husband wished the article, if published, to be re-printed as a chapter in his book, *Studies in Greek and Turkish Popular Religion*, I should be grateful for any suggestions or criticisms which would assist me in removing blemishes from the article before its final incorporation in this book. Letters addressed to me c/o Newnham College, Cambridge, will be forwarded.]

² *J.R. Anthr. Inst.* xli, 221 ff.

archæologically attractive theory is especially dangerous in so far as it touches anthropological questions, since the supposed converted Christians are naturally assumed to be a pre-Turkish, and, in default of evidence to the contrary (which is never forthcoming), an aboriginal population.

The archæologists, then, mainly on the evidence afforded by religion, hold that (1) the heterodox tribes are converted Christians, and they gladly accept the theory of the anthropologists, based mainly on craniology, that (2) the heterodox tribes are aboriginal. The orientalists, headed by Vambéry, deny both these statements, holding that the peoples concerned are mainly of Turkish blood and comparatively recent immigrants from Western Persia or beyond.

As far as religion is concerned, the main purpose of the present paper is to emphasise the fact that, though crypto-Christians exist in Asia Minor, many, if not most, of the unorthodox practices obtaining amongst tribes supposed to have been originally Christian, are in fact to be referred either (1) to the primitive stratum of religion, which survives in superstitious practice among Christians no less than Mahomedans, or (2) to the *Shia* branch of the Mahomedan faith, which, though orthodox in Persia, is to the *Sunni* Turks quite as much outside the pale as the Christianity of the Armenian is to the Greek or *vice versa*.

It is probable that many Turkish tribes, passing through Northern Persia on their way westwards, first met with Islam in the *Shia* form, so that the *Shia* religion may be considered to some extent as the link between paganism and *Sunni* Mahomedanism. We can certainly point to a period during which a *Shia*, or at least a Persianising, form of Islam was prevalent, together with a culture derived almost exclusively from Persia, in Central Asia Minor.

Very considerable confusion has also arisen with regard to the heterodox tribes of Asia Minor owing to a vague and inaccurate use of tribal and other names. It has been more or less assumed that, whatever their original significance, the names Yourouk, Turcoman, Kyzylbash, Takhtadji, Bektash, etc., are on the same footing and have ethnological significance. An examination of what has been written on the tribes in question leads to the conclusion that some of these names denote, not ethnological, but religious and other divisions. Thus, of the names cited above, Yourouk¹ in itself denotes no more than the nomadic life of the tribes so designated, while Turcoman is a tribal name wrongly used to cover a much larger division of the population. Takhtadji ("woodcutter") is essentially a caste-name, Kyzylbash ("red-head") is a nickname for a widely distributed religious sect, while Bektash designates members of a religious organisation within that sect. So far from these categories being mutually exclusive, it would be possible for a single person to come under all of them.

¹ Tk. *youroumek* = to walk. The word "Yourouk" is first used, as far as I can discover, by Rycaut (*Hist. of the Turks*, ii, 138; cf. Pococke, *Descr. of the East* II, ii, 108) of the nomads of the Troad.

§ 2. THE YOIROUKS.

The term Yourouk has long been recognised by ethnologists as of very wide and vague application : in itself, as we have said, it signifies no more than “nomadic.” Dr. Tsakyrogloss of Smyrna, whose profession has given him unusual opportunities for intimacy with the Yourouks of his *vilayet*, is the only writer who has dealt with the Anatolian Yourouks as a whole.¹ He enumerates no less than eighty-eight tribes of them, varying greatly in size and importance and distributed over all parts of Asia Minor.² His list, however, does not profess to be complete, though, if we except the short list of tribes in the Aidin *vilayet* given by Vambéry,³ it is the only attempt to collect Anatolian tribal names. As the pamphlet containing this list is inaccessible, the list is given in full below,⁴ together with some tribal names collected by Langlois in Cilicia, and, for comparison, a list of Turcoman tribes given to Niebuhr by Patrick Russell of Aleppo.

The Yourouk tribes (*ashiret*) bear for the most part personal names, presumably of ancestral chiefs, with or without the adjectival suffix *-li*. Examples are Dourgout, Ahmedli, Gueuk Mousali, Shichli. It is significant that the chief of the latter tribe bears the surname Shichli Baba Zade (“Son of Father Shichli”). Other tribes bear names apparently denoting their *habitat*, as Akdaghlı (“of the White Mountain”), and Roumli, or characteristics as Katchar (“runners”), Tash-evli (“stonehouse men”), Boïni Indjeli (“slim-figured men”), Sari Ketchi-li (“men with yellow goats”).

Traces of early divisions of originally united tribes are probably to be seen in the numerous tribal names running in pairs, such as Selge- and Keles-Katchar,⁵ Kara- and Sari-Tekkeli, Kyzyl- and Kara-Ketchili. Colour-epithets, such as *Kara* (“black”), *Ak* (“white”), *Kyzyl* (“red”), *Sari* (“yellow”), and *Gueuk* (“blue”) are probably in all cases taken from the natural colour or distinctive markings of the flocks of two divisions of the same tribe ; this seems clear from the occurrence of such names as *Ak-koyounlu* (*white sheep* tribe), *Aladja-koyounlu* (*spotted sheep* tribe), *Kyzyl-ketchili* (*red goat* tribe), etc.

Some of the Anatolian tribe-names occur also further East, as Odemish in Merv⁶ and Kengerlu in Transcaucasia.⁷ From the Katchar tribe, which is also to be found

¹ Ηερὶ Γιουρούκων (pp. 40), Athens, 1891. There is also a French translation printed at Smyrna. [Another in German is said to exist in *Globus*, but I have failed to trace the reference.—M.M.H.]

² Tsakyrogloss, *op. cit.*, 13 ff. and 22 : in view of theories regarding the origin of the Zebeks, I note on the latter page the name *Zeibekli* : the significance of the name seems to be somewhat similar to that of Παλληκάρι in Greek (cf. von Diest, *Reisen und Forschungen*, i, 27).

³ *Das Türkenvolk*, 606 (the names which do not figure in Tsakyrogloss’ list are marked by an asterisk) : Selge Katchar*, Keles Katchar, Kara Tekkeli, Sari Tekkeli, Satchi Karali, Eski Yourouk, Farsak, Kyzyl Ketchili, Kara Ketchili*, Khorgoun, Bourkhan, Yel Aldi, Karin Karali*, Karagatchli*, Kirtish, Akdaghlı, Narindjali, Djabar*, Dash Evli, Chepni.

⁴ P. 319 ff.

⁵ Vambéry, *op. cit.*, 606 ; but according to Tsakyrogloss, Koula Katchar, Keles Katchar and Ova Katchar are subdivisions (*mahallas*) of the same tribe.

⁶ Tsakyrogloss, 21.

⁷ Vambéry, 572.

in Transcaucasia, was descended the late dynasty of Persia.¹ Nadir Shah was of the Afshar tribe of Khorassan, with which the Anatolian Afshars claim kinship.² Of the Yourouk tribes in the Aidin *vilayet* enumerated by Vambéry, the Bourkhan, Narindjali, and Kirtish still exist among the Central Asian Turcomans. Baiandir is a subdivision of the Goklen tribe.³

A very large proportion of the tribal names can be found also on the map of Asia Minor as village names, presumably denoting places where tribes or portions of tribes have settled. Examples are Baindir, Ushak, Odemish, Kenger, Tourgoutlou, and many others.

Though most of these tribes are pastoral, some are addicted to other callings : the Katchar and Varsak are camel-men, many of the Yourouks of Mount Ida are woodcutters, the Abdal, whom von Luschan identifies with the gypsies, a beggar caste.⁴ Other tribes are distinguished by their skill in certain crafts, as the Turkmen, Harmandali, and Zili in carpet-weaving, and the Kenger of Adala (near Koula in Lydia) in massage.⁵

The head of the tribe is called *Bey* or *Sheikh*.⁶ The tribe is subdivided into *kabilehs* ("clans") or *mahallas* ("quarters," "wards"), the latter a word in common use as a division of a town among the settled populations. Divisions of the same tribe are found in widely-separated districts in Asia Minor : evidence of such splitting up is to be found in the occurrence of certain tribal-names all over the map. On the other hand, some tribes have a well-defined area within which their settlements are thickly planted. Of this the Afshar tribe of the Taurus affords a notable instance.⁷ Similarly, the original home of the Farsak tribe in Asia Minor seems to have been the mountainous region North-West of Selefke which bears their name.⁸ But scattered units of both tribes, to judge by the evidence of the map, wandered far.

The languages current among the Yourouks are varied. They are mostly rough dialects of Turkish, among which those of Azerbeijan and Jagatai have been recognised.⁹ Dr. Chasseaud of Smyrna tells me he has found that Yourouks from different parts (presumably of the Aidin *vilayet*), even when they acknowledge kinship, are unable to understand each other. Tsakyroglossus says, further, that some tribes speak Kurdish, *i.e.* probably, that some nomads are Kurds, and that the Abdal speak a language of their own.¹⁰

¹ Vambéry, 572, 577.

² Vambéry, 607.

³ Vambéry, 394.

⁴ Tsakyroglossus, *op. cit.*, 19. Vambéry (p. 391) found a subdivision of a Central Asian Turcoman tribe so named.

⁵ Tsakyroglossus, 21.

⁶ Tsakyroglossus, 17.

⁷ Grothe, *Vorderasienexpedition*, ii, 135 and map. See also Ramsay, *Impressions*, 108 ff.; Tschihatscheff, *Reisen*, 14; Skene, *Anadol*, 184; van Lennep, *Travels in Asia Minor*, ii, 96.

⁸ Hadji Khalfa, tr. Armain, 665.

⁹ Tsakyroglossus, *op. cit.*, 22.

¹⁰ Tsakyroglossus, 26, where samples are given.

As to the religion of the Yourouks, on which subject they are extremely reticent, very varied accounts have been given. Humann speaks of them in Western Asia Minor as entirely without religion.¹ Drs. Tsakyroglous and Chasseaud, with their more intimate knowledge, concur in considering them (negatively) heretical. Some nomad tribes are certainly *Shia*,² while the Yourouks of Lycia are reported by Bent to be good *Sunni* Mahomedans.³ These discrepant accounts are intelligible only when we realise that the Yourouks are not a homogeneous race, but a collection of tribes and sub-tribes which, originally pagan, have fallen to a greater or less degree under various missionary influences.

It is generally reported of Yourouks that circumcision is not usually practised among them, and that when the operation is performed from motives of policy, they prefer that it should not be done by a *Sunni* in orthodox fashion. A similar prejudice is implied by the story quoted by Tsakyroglous⁴ from the Turkish newspaper *Hakikat* to the effect that a Jew from the Dardanelles is habitually invited by the Yourouks of Mount Ida to perform for them some ritual act at marriages. This is probably a confusion, the same word (*duyun*) being commonly used by the Turks both for marriage and circumcision (properly *sunnet*).⁵

Dr. Chasseaud tells me that when he has operated on Yourouks the feast was made several days after, and a *hodja* duly invited. It was then explained to the latter that the operation had been already performed, and his scruples silenced by a present of money. The object of this manœuvre is probably to ensure the proper disposal of the part amputated in order that it may not come into the wrong hands.⁶ Similarly, Dr. Chasseaud tells me both Yourouk women and

¹ *Verhandlungen Ges. f. Erdkunde*, 1880, 248.

² C. B. Elliott, *Travels*, ii, 107 (Turcomans near Akhissar); Hadji Khalfa, tr. Armain, 656 (Turcomans near Trebizond); *ibid.*, 683 (*liva* of Bozouk = Kirshehr). The Afshars are *Sunni* (Karolides, *Tà Κύμανα*, 42) but do not veil women.

³ *J. R. Anthr. Inst.*, xx, 274; cf. von Luschan, *Lykien*, ii, 216.

⁴ Περὶ Γιουρούκων, 32.

⁵ So apparently in India the Persian word for marriage (*shadi*) is used for both ceremonies (Hastings, *Dict. of Religion*, s.v. *Circumcision*, 678). For the performance of the operation by non-Musulmans, see the same article, p. 677.

⁶ Hastings (*Dict. of Religion*, s.v. *Circumcision*, p. 678) says "the *exuviae* seem generally to be burned or buried, sometimes in a mosque." At an imperial circumcision in 1582 the part amputated was presented in a golden box to the Queen Mother (de Vigenère, *Illustr. sur Chalcondyle*, 271, in de Mezeray's *Hist. des Turcs*, ii). In the seventeenth century the Turks burnt it (Aaron Hill, *Account of Turkey*, 47). Among Persians of the same date *aut gallinis edendūm dabatur aut a feminis sterilibus spe progeniei consumebatur* (Raphael du Mans, *Estat de Perse*, ed. Schefer, 77). Scarlatos Byzantios in the middle of the last century, writes: "Τὸ ἀποτμηθὲν μέρος ἀπτεται ἡ φέρεται ὡς φυλακτήριον ἐπὶ τῆς κεφαλῆς ἵπὸ τοῦ νεοφωτίστον" (Κωνσταντινουπόλις, iii, 485). Osman Bey states that the part amputated is presented to the parents on a plate, where they in return place the customary gifts (*Les Imans et les Derviches*, 121). The magic power of the part in question is thus proved: it might be used actively as a charm or merely put out of harm's way. The modern Turks in towns are said to be very careless in the matter, doubtless regarding the superstitions concerned as old wives' tales: hence possibly the scruples of the Yourouks, who are still punctilious in the matter.

Turkish midwives in towns are exceedingly scrupulous that the *placenta* should be properly disposed of.¹ Some Cappadocian Greeks hide the umbilical cord of new-born children in a chink in the wall of church or school, which ensures that the child grows up devout or learned.² It is natural to compare the similar superstitions about nail-parings and extracted teeth.³

When a *Sunni* preacher visits the Yourouk villages of Mount Ida during Ramazan, he is lodged in the best tent and royally entertained, but induced by a present of money to abstain from meddling with the Yourouks' ceremonies and from preaching and teaching.⁴

All this merely shows that the tribes in question are not *Sunni*. Little has been extracted from them as to the positive side of their religion. According to Dr. Chasseaud, the Yourouks have an initiation ceremony corresponding to circumcision at which he has himself been present, though he was unable to see what took place. Further, their holy places—called, as all over Turkey, *dedes*—are frequently trees or bushes, not remarkable to the outside observer, which they hang with rags; certain springs, also not outwardly remarkable, are held sacred. On two occasions Dr. Chasseaud, when in the company of Yourouks, was prevented by them from drawing water at such springs, though the *tabu* did not extend to the Yourouks themselves. A Yourouk mountain-cult with a festival on August 15th on the summit of Ida and vaguely connected with two giants (male and female), to whom small offerings of money are made, has come under my own observation.⁵ These hints, so far as they go, point to a primitive animistic religion slightly touched with anthropomorphism.

The Lycian Yourouks (as opposed to the heretical Takhtadji) are regarded by both Bent⁶ and von Luschan⁷ as good *Sunni* Mahomedans: they have *hodjas*, the Koran, and circumcision, say their five prayers, eschew pork and wine, and make pilgrimage to Mecca. In villages they assimilate themselves to the settled

¹ On the importance attached to the *placenta* in Egypt and elsewhere, see Seligmann in *Man*, 1911, 168, and in *Ridgeway Essays*, 451. For Turkey, cf. Abbott, *Macedonian Folklore*, 123.

² Pharasopoulos, Τὰ Σύλλατα, 41.

³ Frazer (*Taboo and the Perils of the Soul*, 267 ff.) shows that superstitious care in the disposal of nails and teeth is world-wide, the original idea being to prevent their malicious use by sorcerers. In Bosnia nail-parings are placed where contact with unclean things is not likely, in fountains, in the earth, or in a mosque (*Wiss. Mittb. aus Bosnien*, vii, 279). For the superstition in Asia Minor, see White, *Trans. Vict. Inst.*, xxxix (1907), 159; de Bunsen, *Soul of a Turk*, 147; Aucher-Eloy, *Voyages*, 71 (hole in mosque wall at Angora used for extracted teeth and toothache so cured); in Macedonia, Abbott, *Macedonian Folklore*, 214; in Lesbos, Georgeakis et Pineau, *Folk-Lore de Lesbos*, 331.

⁴ *Hakikat*, ap. Tsakyrogloous, 32; cf. for Persian nomads Malcolm, *Hist. of Persia*, ii, 433.

⁵ Cf. Leaf in *Geog. Jour.* xl, 1912, 37. The date seems at first sight to be a link with Christianity, but it should be noted that the same day is a witches' feast in Georgia (N. W. Thomas in *Man*, 1901, 57) and a Bektashi feast in Albania (Degrand *Haute Albanie*, 234).

⁶ *J. R. Anthr. Inst.*, xx, 274.

⁷ *Lykien*, ii, 216.

population, though intermarriage is rare.¹ *Sunni* propaganda, as we have seen, exists among the Yourouks of Ida : it is said to have made great strides elsewhere, especially in the Konia *vilayet*.² The Yourouks of Lycia are probably of comparatively recent conversion.

Of the *Shia* heresy there is little or no trace except among the confessedly "Kyzylbash" tribes,³ which we shall discuss at length⁴; we do not know whether *Shia* missionaries are at work among the pagan nomads. Nor are there any positive traces of Christianity, though the idea is widely, if vaguely, current. The evidence we have points to the conclusion that, except where they have been affected by *Shia* or *Sunni* propaganda, the Yourouk tribes are "primitive" in religion ; further, that by race and speech they are largely Turkish, and may be regarded as still unsettled fragments of the nomad hordes which strayed into Asia Minor in the Middle Ages.

The Turks, before they left their home in Central Asia, worshipped the sky-god (Tañri)⁵ and spirits of earth and water ; they had no priestly caste.⁶ That ancestor-worship developed early is clear from the present comprehensive use of *dede* (lit. "grandfather") to describe any holy place⁷: gaining ground, possibly because more or less permitted in Islam, it seems to have been fused with the original elements of their religion, and especially with the cult of "high places," originally doubtless the places where the sky-god was worshipped, especially for rain.⁸ We consequently find that mountains in Turkey frequently bear human names, which are, or are said to be, those of saints. When these saints' names

¹ Von Luschan, *Lykien*, ii, 216.

² Tsakyroglious, Περὶ Γιουρούκων, 35.

³ I here note the frequency of the name Haider among Yourouks, perhaps a link with the Kyzylbash. The Yourouks are said by the writer of the *Hakikat* article to drink wine, which is still negative evidence of Shiism, and to be visited yearly by an itinerant holy man (? from Syria), which is true of the Lycian Kyzylbash and may be merely a confusion.

⁴ Below, p. 327 ff. Some include the Tchepni in this category ; see Oberhummer, *Durch Kleinasien*, 393. Wilson in *J.R.G.S.*, 1884, 314, calls them Nosairi by religion. See also von Diest, *Reisen und Forschungen*, i, 27.

⁵ On the word see Vambéry, *Prim. Kultur des Turko-Tatarischen Volkes*, 240 ff. This seems to have been the current word for "God" in Turkish till quite a late date, cf. Schiltberger, ed. Hakluyt, 74, ed. Penzel, 149 ; Leunclavius, *Pandectes*, § 177 ; Hammer-Hellert, *Hist. Emp. Ott.*, iv, 64. It occurs frequently in the modern folk-tales collected by Kunos.

⁶ Eliot, *Turkey in Europe*, 79. The latter is still true of the nomads. The first Turkish ruler to embrace Islam is said to have been Satok Bogra, Khan of Turkestan, died 1048 (Grenard in *Journ. Asiat.*, xv, 1900, 5 ff.).

⁷ Bent in *Report British Assoc.*, 1889 (Newcastle), Sect. H, p. 3, says tribes of Azerbeijan (the district through which the Turks came into Asia Minor) are governed by hereditary chiefs, supposed to descend from a tribal holy man (*pir*) : the grave of the *pir* is shown at the summer quarters of the tribe. For *dede* with the meaning of *numen*, cf. Ramsay, *Pauline Studies*, 172.

⁸ This custom is preserved among the *Shia* Turks (Kyzylbash) of Pontus (White in *Trans. Vict. Inst.* xxxix (1907), 154). They have also a festival at the summer solstice held on mountain tops.

are also those of tribes, it seems probable that they are regarded as the eponymous ancestors of the tribes concerned. In tribes still without a priestly caste the tribal chief is the natural person to invoke the sky-god on behalf of the tribe, and the eventual confusion between the sky-god who sends rain and the tribal chief whose prayers induce him to send it, is merely the confusion between deity and intercessor which is familiar enough in Christendom.

The rainmaker-sheikh and the magician or dervish are hardly distinguishable, so that we are not surprised if Tour Hassan *Veli*, the saint of the Hassan Dagh in Cappadocia, and his tribesmen are said in folk-tales to have been dervishes,¹ or if Ibn Batuta² says of Baba Saltuk, the tribal saint of a group of Crimean Tartars, that he was "said to have been a diviner."

Tour Hassan seems really an historical figure known by a lucky accident to have been a petty prince ruling part of Cappadocia about 1100 A.D.³ The name of his tribe survives in Tour Hassanli, a village near Kirshehr, the word being formed, like the majority of tribal names in Tsakyroglous' list, by adding *-li* to the name of the eponymous chief. Of Saltuk before he became involved in the Bektashi legend, we know less, but here again the tribal name Saltaklu seems to be preserved at a village near Baba Eski in Thrace and possibly in Asia Minor.⁴

The tribe of Mentesh, which eventually gave its name to the *kaza* of Moughla in Caria, can be traced by villages bearing its name from the Sivas district westward across Asia Minor. The eponym Mentesh figures in tradition⁵ as the brother of Hadji Bektash, who was himself before the usurpation of his tomb by the Houroufi sect,⁶ no more than a tribal ancestor. Bektashli is a fairly common village-name in the district round his tomb and occurs sporadically so far west as Cape Lectum.⁷ Not only Bektash himself but many of the "seven hundred dervishes" of his cycle, who came with him from Khorassan at the bidding of Khodja Achmet of Yassi for the conversion of Roum,⁸ must have been tribal heroes of the same kind.

This grouping round tribal leaders seems to be the basis of the early Turkish polity : the tribal tie was not always one of blood, since powerful tribes or leaders included under their own name less important allies. The tribe known from its leader as Osmanli was a political combination of this sort, and is said to have been

¹ Carnoy et Nicolaides, *Trad. Pop. de l'Asie Mineure*, 212 ff.

² Tr. Sanguineti, ii, 416, 445.

³ Anna Comnena, xiv, 1 ; cf. also Tomaschek, *Sber. Wien. Akad., Phil. Hist. Cl.*, exxiv (1891), viii, 85.

⁴ See *B.S.A.*, xix, 205.

⁵ Ashik Paslı a Zade in Brown, *The Dervishes*, 141.

⁶ Jacob, *Die Bektaschijje*, 19 (in *Abh. k. Bayr. Ak.*, xxiv, 1909).

⁷ This village is at least as early as the seventeenth century, being mentioned in the British Museum MS. Harl. 7021, f. 422 vso.

⁸ Evliya, *Travels*, tr. von Hammer, ii, 70 ff.

composed of seven tribes, of which at least one (the Farsak¹) still exists independently as a Yourouk tribe. A similar political grouping in recent times is that of the Shahsavand Kurds, which was formed artificially and purely for political reasons by Shah Abbas of Persia in the seventeenth century.² Such probably was the grouping of tribes round the Seljouk dynasty, which succeeded in attaining to a considerable degree of material civilisation and political cohesion, dominating the greater part of Asia Minor.

When the central power became weakened, however, the combination disintegrated into smaller territorial units, resting probably on similar tribal groupings, which kept their names in some cases for many centuries.³ The province of Tekke (Adalia) is a notable instance. Tekke or Tekkeli is a "Yourouk" tribe in Asia Minor to this day⁴—the name occurs also in Central Asia—and the Tekke-oglou, descendants or reputed descendants of the tribal eponym, were still important *derebeys* in the Adalia district as late as the reforms of Mahmoud II.⁵

Down to the reforms and centralisation of the early nineteenth century the nomad tribes were allowed a great deal of liberty and were administered by their own *beys*,⁶ occasionally by strangers appointed from Constantinople.⁷ They seem to have been turbulent and easily excited to rebellion. Their risings were often fomented by *sheikhs*, probably Persian emissaries sent over the frontier to embarrass the Sultan.

In the wooded mountains of Anatolia and in the steppe land of the central plateau, notably in the districts of Bozouk (Kirshehr) and Haimaneh, where the natural conditions—thin soil and lack of water—are against permanent settlement the Yourouks have been able to maintain themselves in compact masses without abandoning their primitive social conditions: the mountaineers turn to wood-cutting and the men of the plains to herding.

¹ Hammer-Hellert, *Hist. Emp. Ott.*, i, 361.

² Bent, *Report Brit. Ass.*, 1889 (Newcastle), Sect. H, p. 3.

³ Kyzyl Ahmedli (in Paphlagonia) and Mentesh (in Lycia) are probable examples. In 1564 the Venetian *Relazioni* (Alberi, ser. III, vol. ii, 19) mention as leading families in Asia Minor the Kyzyl Ahmedli (Paphlagonia), Diercanli (Saroukhan?), Durcadurli (Zoulkadir), and Ramadanli (Cilicia).

⁴ Settled according to Tsakyroglous, Περὶ Γιουρούκων, 15, about Nazli in the Aidin *vilayet*: see below, p. 321.

⁵ Cuinet, *Turquie d'Asie*, i, 860; W. Turner, *Tour in Levant*, iii, 386; Beaufort, *Karamania*, 118 ff.; Cockerell, *Travels*, 182.

⁶ Leunclavius, *Pandectes*, § 61; a "chief of the tribes," Tourgout, is mentioned as a feudatory of the Karamanoglu dynasty in the time of Mourad II (1421–1451) by Hammer (*Hist. Emp. Ott.*, ii, 288). The Yourouks of Roumeli in the eighteenth century supplied a contingent of 57,000 troops under their own leaders (Perry, *View of the Levant*, 48).

⁷ A Circassian, Abaza Hassan, was appointed Voivode of the Anatolian Turcomans (see below, p. 324) in the seventeenth century (Hammer-Hellert, *op. cit.*, x, 300). Abaza Hassan's palace at the modern Vezir Kupru is mentioned by Hadji Khalfa, tr. Armain, 683.

Various attempts have been made to break up their solidarity and wean them to settled life, the first by the importation of Kurds,¹ the second by the formation of town-centres. Many towns of the districts mentioned seem to be of recent origin and artificial foundation. Ak Serai is a Seljouk foundation of 1171,² Nevshehr was founded by Damad Ibrahim in 1720,³ and Yuzgat, the capital of the Tchapanoglou, dates from the eighteenth century.⁴ The two latter certainly are not spontaneous growths but artificial settlements.⁵

The more backward tribes are still nomadic in the restricted sense—that is, they have definite summer pasturages and fixed winter quarters, between which they alternate.⁶ The winter quarters tend gradually to become fixed villages, and despite the mutual antipathies of “Turk” and “Yourouk,” some tribes are said to be absorbed by towns.⁷ But government pressure has not yet succeeded in weaning the Yourouks from their old life and their conversion to Islam is also incomplete.

In view of all we have said, it would be surprising not to find among these heterogeneous tribes great diversity in physical type, as well as customs and religion, within the restrictions imposed on them by their manner of life, and future investigators will perhaps do best to consider the tribes known as “Yourouk” more as separate units than has been done hitherto. Their apparent and obvious similarities, such as the absence of mosques, relatively high status of women,⁸ and hospitality, are probably due to the habits of life shared by the whole group irrespective of race.

ADDENDUM.

Yourouk Tribes according to Tsakyrogloous, Ηερὶ Γιουρόνκων, 13 ff.

(a) In the north-west portion of the *vilayet* :—

Ahmedli : part at Koula, part at Simav in the adjoining *vilayet* of Brusa.

Altdji ('Αλτσί) : about Attala as far as At-alan.

Anamasli : in the *kaza* of Demirdji. It has 50 tents and 70 houses (*dam*), 16,000 beasts, and pays 15,000 p. in *verghi*.

¹ The Kurds of the Haimaneh district are *Sunni* (Cuinet, *Turquie d'Asie*, i, 253).

² It was founded by Kilidj Arslan in 1171 (Le Strange, *Eastern Caliphate*, 149).

³ Hammer, *Hist. Emp. Ott.*, ed. Hellert, xiv, 190. Damad Ibrahim was Vizir 1718–1730 (Hammer, *op. cit.*, xiii, 336, xiv, 225).

⁴ W. J. Hamilton, *Researches in Asia Minor*, i, 387, speaks of Yuzgat as being “ninety years old.” There was another attempt in the fifties to settle nomad Kurds near Yuzgat (H. J. Ross, *Letters from the East*, 248).

⁵ None of these towns is an important centre at the present day, and in antiquity the districts in question contained no towns of great note.

⁶ Cf. the nomads of Adana, who winter there and summer at Cæsarea (Langlois, *Cilicie*, 23).

⁷ Ramsay, *Impressions*, 101.

⁸ Women are not veiled even among *Sunni* tribes : this is categorically stated by Karolides of the Afshar (Τὰ Κομαῦα, 42) ; the veiling of women is not an original Turkish usage.

Arapli: about Salihli, and extends into the *vilayet* of Brusa.

Farsak: all over the *vilayet* of Aidin. It is a very rich and populous tribe, counting 1,200 families.

Gueuk Mousali: in *kaza* of Demirdji, above the village of Indjikler. It has 50 houses and 50 tents.

*Hourzoum*¹: in the *vilayets* of Aidin and Brusa.

Ivatli: about Karneit: it possesses 22 tents.

Kara Tekkeli: winters about Smyrna.

Katchar: at Serge and Alashehr, extending south as far as Nazli. A large and important tribe divided into *mahallas*, Koula-Katchar, Keles-Katchar, Ova-Katchar, etc.²

Kombatch: about Soma.

Kyzyl Ketchili: at Prinar-Kiov, in the *mudirlik* of Selenti (Koula). It has 800 tents, 60,000 beasts, and pays 60,000 piastres taxes.

Manavli: between Alashehr and Salihli and in the *vilayet* of Brusa.

Narindjali: *kaza* of Koula, in the neighbourhood of Omour Baba Dagh up to Denizli.

Saratch: between Ushak and Esme.

Sari Tekkeli: between Nazli and Denizli, and in the *vilayet* of Brusa.

Shehidli: *kaza* of Koula. It has 60 houses.

Shichli: winters at Uluborlu, summers at Afion Kara Hissar. It is divided into ten *kabilés* (including Arpat-shichli, Kisat-shichli, Hadjiseli), possesses 70–80 tents and 200 houses, and pays 15,000 piastres taxes.

Tchakal: in the *sandjak* of Saroukhan.

Tcharik: in the *kaza* of Koula.

Yaghdzi Bendirli (or *Yangdzi Bendir*): Soma and the *vilayet* of Brusa.

(b) South-western and other districts of Aidin *vilayet* :—

Abdal: Uluborlu and elsewhere.

Akdaghli: about Nazli.

Ak-kozali.

Aladja Koyunlu: up to Konia.

Allah-Abeli: *sandjak* of Saroukhan.

Beylikli.

Boini-indjeli.

Bourkhan: also in *vilayet* of Brusa.

Dede Karkinli: *sandjak* of Saroukhan.

Deridji: *vilayets* of Aidin and Brusa.

Djerit: about Nazli.

Dosouti: Arapli.

¹ Vambéry's Khorgoun.

² Vambéry adds Selge Katchar.

Eski Yourouk.

Eshpek (Ἐσχπέκ).

Geigel.

Gerinisli : Nazli to Moughla.

Giushdji : Nazli.

Guzel-beyli : about Nazli.

Harmandali.

Hartal.

Ignedji (Ἴγνετζί) : *sandjak* of Saroukhan.

Imir-haridji : *sandjak* of Saroukhan.

Karafakoglou : *vilayets* of Aidin and Brusa.

Karamanli : Nazli to Isbarta.

Karayaghjili.

Kilaz.

Kioseler : Nazli.

*Kirtiz.*¹

Kislilerli : *sandjak* of Saroukhan.

Kodja-Beyli : *vilayets* of Aidin and Brusa.

Kyzyl-Issikli : also in the *vilayet* of Brusa.

Mousarlarli : *sandjak* of Saroukhan.

Mouzan : also in *vilayet* of Brusa.

Omourlu.

Rachman.

Saatdji-Karali (Σαατζί Καραλή)² : about Nazli.

Sari-Ketchili.

Tash Evli.

Tchambar : *vilayets* of Aidin and Brusa.

Tchipni : an important tribe, scattered all over the Aidin *vilayet*.

Tchitmi.

Tekkeli : Nazli.

Teradji.

Yataganli : about Karagatch.

Yel-aldi.

(c) Mainly in *vilayet* of Konia :—

Dourgout : important tribe, perhaps Mongolian.

Piroglou.

Risfan.

Roumeli or *Oroumli*.

Tapanli.

¹ Vambéry's *Kirtish*.

² Satchi *Karali* in Vambéry.

Terkiani.

Turkmen.

(d) Exclusively in *vilayet* of Adana :—

Berber.

Karsant.¹

Menemendji.¹

Sirkentili.¹

Additional (*habitat* not specified) :—

Barakli.

Imrazli.

Kalabak.

Karandirluk.

Ketchili.

Mersinli.

Nihar.

Tarazli.

Tchamban.

Tchebrekli (Kurds).

Zeibekli.

Yourouks of Cilicia according to Langlois, *Voyage en Cilicie*, p. 21 ff. :—

TARSUS :

Baxis and H. Hassanoglou with 300 H.

Kalaounlu with 30 H.

Karakaialu with 700 T.

Kara-tekeli with 150 H.

Melemendji with 3,000 H.

Pouran and Moustapha-bey with 200 T.

Sortan and Kudjuoglu with 500 H.

Tekeli with 600 H.

Thoroglu with 300 H.

ADANA :

Bousdagan with 1,400 T.

Daoundarlu with 200 T.

Djerid with 1,200 T.

Farsak² with 800.

Kara-hadjelu with 500 H.

Karitinlu with 100 T.

¹ These are, according to Grothe (*Vorderasiensexpedition*, ii, 145), subdivisions of the Afshar tribe.

² Mentioned also by Bertrandon de la Brocquière, p. 8.

Yourouks of Cilicia—continued.

ADANA—*continued.*

- Kerim-oglou with 2,500 T.
- Khozanoglou with 500 H.
- Sarkanteli-oglou with 800 T.
- Tadjerlu with 1,200 T.

MARASH:

- Djedjale with 200 T.
- Hadji Kouyounlu with 120 T.
- Klisle with 400 T.

*Kurds of Cilicia*¹ (*ibid.*) :—

ADANA (at CÆSAREA in summer) :

- Afchar with 3,000 T.
- Karalar with 600 T.
- Karsanteli with 1,300 T.
- Lek with 150 T.

For comparison I add the list of sub-tribes of the Afshars given by H. Grothe²:

Awschar.

Beisgitli.

*Bosdan.*³

Djedjeli Salmanly.

Djerid.

Farsak.

Hadji Mustafa Ali-Uschak.

Hadji Mustafa Redje Uschak.

Hodjan Ali.

Hür-Uschak.

Jaidji-usch.

Karsanty.

Kekili Uschak.

Kirli.

Kosan.

Melemendji.

Schabbach.

Tedjerli.

Torun.

¹ Some Kurds are pagan, some are *Sunni*, and some are said to be Yezidi (Langlois, *loc. cit.*, p. 23).

² *Vorderasiensexpedition*, ii, 145, n. 2.

³ [Sometimes written Bosdaghan.—M.M.H.]

§ 3. THE TURCOMANS.

The word Turkmen (Turcoman) seems properly applied to an important tribe of the Yourouk group. This tribe is widely distributed, being found in the districts of the Bithynian Olympus, Dineir, Konia, Sivas and even Cyprus.¹ Dr. Chasseaud considers that the term denotes a markedly Mongolian type and is synonymous with Tartar.² The Turkmens with whom he is acquainted are herdsmen by calling, not rich, and frequently serving others.

This tallies with the account given by Burckhardt³ of the Turcomans he knew. He divides them into five main tribes, namely, the "Ryhanlu" with thirteen sub-tribes, the "Jerid" with six sub-tribes, the "Pehluvanlu," the "Rishwans" with four sub-tribes, and the "Karashukli." Of these, the "Karashukli" are a mixed tribe of Turcomans and Arabs, living near Bir on the Euphrates. The Pehlivani are the most numerous, while both the Djerid and the Rishwans are more numerous than the Rihanli, who have 3,000 tents, each containing two to fifteen inmates, and muster 2,510 horsemen all told. The Pehlivani and the Rihanli are tributary to the Tchapanoglou, the Djerid to the governors of Badjazze (Baias ?) and Adana, between which they live. The Rishwans also are now tributary to the Tchapanoglou, though formerly to the governor of Besna (Behesneh ?) near Aintab. The Pehlivani drive sheep as far as Constantinople, and their camels form almost exclusively the caravans of Smyrna and the interior of Anatolia. The Rishwans are notorious liars. If Rihanli families dislike their chief, they join another tribe. Some of the Pehlivani have long been cultivators, but the Rihanli employ *fellahs* to cultivate for them.

But the word has for long had a wider signification, exactly corresponding to the ordinary use of the word Yourouk, *i.e.* it denotes nomadic as opposed to settled Turks. The word is found with this meaning as early as Cinnamus⁴ and is still so used by the modern Turks.⁵

¹ Tsakyrogious, *op. cit.*, 11.

² So Tsakyrogious, 34, von Luschan, *J. R. Anthr. Inst.*, xli, 227, and van Lenne, *Travels in Asia Minor*, i, 296.

³ *Travels in Syria*, App. I, pp. 633 ff.

⁴ P. 121P: cf. Ducange's note *ad loc.*; Leunclavius, *Pandectes*, § 61; Ramsay, *Hist. Geog.* 213, and *Cit. and Bish.*, 696.

⁵ Tsakyrogious (*op. cit.* 11) says that the words "Turkmen," "Yourouk," "Götchebeh" (Tk. *götc̄ etmek* = to move house; Kotche is the Turcoman word for nomad according to Vambéry, *op. cit.* 385) are used by the Turks indiscriminately for nomads, except that the last implies a tribe on the move. Turks and Turkomans are distinguished by Hadji Khalfa, tr. Armain, 690.

ADDENDUM.

P. Russell's list of *Turcoman tribes*, as published in Niebuhr's *Voyage en Arabie*, ii, 336 ff.¹

In country of Sivas and Angora :—

Aghsje Kiuneli [*Akdje Koyounlou*] : 500 T.

Auschir [*Avshar*] : 500 T.

Beherli : 1,000 T.

Dsjerid [*Djerid*] : 500 T.

Kudsjikli [*Koutchouklou*] : 10,000 T.

Lek : 1,000 T.

Pehlivanki : 15,000 T.

Scham Biadli : 500 T.

In Sivas district :—

Dsjefrghanli [*Djafferghananhli*] : 200 T.

Eilebbeli [*Ilbekli*] : 2,000 T. (half in Aleppo district).

Irak : 1,000 T. (summer at Sivas, winter at Zor).

Kulindsjefti : 500 T.

Rihanli : 2,000 T. (summer at Sivas, winter at Aleppo).

Sufulir [*Sofoular*] : 500 T.

In Angora district :—

Burenik : 12,000 T.

In Aintab district :—

Dade Kirkan : 100 T.

Dindischli : 500 T.

Ditumli : 3,000 T.

Dsjadsjeli [*Djadjeli*] : 1,000 T.

Kirsak : 2,000 T.

Musa Beikli [*Musa Beyikli*] : 500 T.

In Cæsarea district :—

Dadli : 200 T. (summer at Cæsarea, winter in Urfa *pashalik*).

Karadsjekerd [*Karadja Kurd*] : 500 T.

Kuluk [*Koulak*] : 200 T. (summer at Cæsarea, winter at Adana).

¹ [Niebuhr complains of the difficulty he had experienced in making out the list because Russell had sent him no transcription of the Turkish names and he himself knew no Turkish. To facilitate use of the list in connection with the article by readers with no knowledge of Turkish I have sometimes inserted in square brackets a transcription more in harmony than Niebuhr's with the spelling usually adopted by my husband. In some cases, however, the Turkish names are too corrupt even for a rough rendering. Professor Margoliouth has kindly checked my transcriptions.—M.M.H.]

In Aleppo district :—

Aulischli [*Aulashli*] : 200 T.

In Damascus district :—

Kabeli : 1,000 T.

Kara Kojunli [*K. Koyounlou*] : 500 T.

Syria, mostly Damascus *pashalik* :—

Aiali : 1,000 T.

Asehdjuli [*Azedinli*] : 500 T.

Ausferli [*Auzarli*] : 1,000 T.

Eilner [*Imir*] : 500 T.

Fidsjeli : 200 T.

Kikli [*Geikli*] : 2,000 T.

Saradsjäller [*Saradjalar*] : 500 T.

Scherefli : 500 T.

Tuchtamarli : 500 T.

In Urfu *pashalik* :—

Baujindir [*Baindir*] : 300 T.

Bekdeli : 12,000 T.

Mahmalenli : 500 T.

List of Turcoman tribes according to Burckhardt.¹

(a) *Rihanli* : 3,000 tents : north-west of Aleppo : winter in Antioch plain, summer in mountains of Gorun and Albistan.

Sub-tribes of Rihanli :—

Aoutshar : 20 horsemen.

Bahaderlu : 100 horsemen : mountains of S. Simon.

Cheushu : 200 horsemen : from Badjazze (Baias ?).

Coudanlut : 600 horsemen.

Delikanli : 600 horsemen.

Hallalu : 60 horsemen.

Kara Ahmetli : 150 horsemen.

Kara Soleimanlu : 50 horsemen.

Karken : 20 horsemen.

Leuklu : 100 horsemen.

Okugu : 50 horsemen.

*Serigialar*² : 500 horsemen : Maden.

Toroun : 60 horsemen.

¹ *Travels in Syria*, 633 ff.

² [Niebuhr's Saradjalar.—M.M.H.]

List of Turcoman Tribes—*continued.*

(b) *Djerid* : between Badjazze (Baia ?) and Adana : winter in plains, summer in the Armenian mountains.

Sub-tribes of Djerid :—

Aoutshar.

Bosdagan.

Karegialar [Karadjalar].

Jerid.

Leck.¹

Tegir.²

(c) *Pehlivani* : live in district of Bosurk (? Bozuk, near Angora) and near Constantinople : summer one day's distance from the Rihanli.

(d) *Rishwans* : winter in Haimaneh district near Angora, formerly near Aleppo.

Sub-tribes of the Rishwans :—

Delyanki.

Gelikanli.

Mandolli.

Omar Anli.

(e) *Karashukli* : near Bir on Euphrates.³

II.

§ 4. THE KYZYLBASH, TAKHTADJI, AND BEKTASHI.

The word *Kyzylbash* (lit. “red-head”) is said by all authorities to be of comparatively recent origin, dating only from the establishment of the Sefavi dynasty of Persia by the Shah Ismail in 1499.⁴ “Kyzylbash” was originally a nickname given to the new Shah's supporters on account of their having adopted as a distinguishing mark

¹ These speak a language of their own (Burekhardt, *op. cit.*, 642).

² Cf. Grothe's *Tedjerli*, above, p. 323.

³ A comparison with the list of the Turcomans of Luristan as given by Rawlinson (in *J.R.G.S.*, ix, 1839, 103) is also of interest. He enumerates them as follows:—*Ulaki* and *Mal Ahmedi*, with 400 families, wintering at Sar Dasht and Dizful, summering at Japalak and Silakhir: *Bukhtiyariwand* with 600 families and the same *habitat* as the above: *Duraki* with 4,000 families, summering at Chahar Mahal and wintering as above: *Sallaki* with 2,000 families, summering at Burburud: *Kunursi* with 1,000 families, summering at Feridun and about Zardah Kuh, wintering at Ram Hormuz, Janniki-Garmasir, and about Schuster: *Suhuni* with 1,500 families, *habitat* as Kunursi: *Mahmud Saleh* with 1,000 families and same *habitat*: *Mogui* with 500 families, *Memiwand* with 4,000, and *Zallaki* with 4,000, all with *habitat* as Kunursi: *Bawai* with 3,000 families, *Uruk* and *Shaluh* combined with 2,500 families, summering at Bazuft and wintering at Susan and *Mal Amir*.

⁴ Hammer-Hellert, *Hist. Emp. Ott.*, iv, 90 and iv, 94, note; cf. Leunclavius, *Pandectes*, § 188; d'Herbelot, *Bibl. Orient. s.v. Haidar*; Knolles, *Hist. of Turks*, 316.

a red cap : the name continued in Persia to designate a kind of warrior-caste or order of knighthood.¹

The Persian change of dynasty brought with it a change in the official religion, since the preceding monarchs had been of Turkish origin and *Sunni*, whereas Shah Ismail adhered to the *Shia* doctrines of his father.

The name “Kyzylbash,” therefore, is associated from the first both with Persian nationality and Persian (*Shia*) religion, but has no ethnological significance whatever. In modern popular Turkish, owing to the long enmity between the two nations and the two religions, and to the suspicion and dislike with which the Turks regard the “Kyzylbash” of their own country, the word is used merely to designate a person of loose morals.²

As regards Anatolia, “Kyzylbash” is a contemptuous term used to denote the adherents of all sects of the *Shia* religion, including, e.g., the Nosairi and Yezidi, irrespective of race or language : the corresponding inoffensive term, by which the Anatolian Kyzylbash designate themselves, is Allevi (“worshippers of Ali”). Both terms include the *Shia* tribes of Northern Asia Minor, who are said to be Iranian Turks³ and speak Turkish, and the so-called “Western Kurds,” whose speech is a distinct dialect (“Zaza”) of Kurdish or Turkish, and whose race is generally thought to contain a strong admixture of Armenian blood. This opinion, based not only on the physical characteristics of the tribes concerned but on tradition of various kinds, is of some importance as bearing on the question of the Christian element in the Kyzylbash religion : we shall return to it later.

In the West of Asia Minor the “Kyzylbash” are found only sporadically. In the Smyrna *vilayet* they are numerous in the *sandjak* of Tekke (Lycia), where they are called “Takhtadjı,”⁴ and are reported by Tsakyroglous to inhabit certain valleys of the Hermus⁵ and Mæander,⁶ where they are nomadic or semi-nomadic.⁷ The Kyzylbash of Kaz Dagh (probably Ida, which other considerations point out as a Kyzylbash district) are mentioned by Cantemir,⁸ and Oberhammer found Kyzylbash villages in the neighbourhood of Afion-Kara-Hissar,⁹ which forms a link on the main highway between the Eastern and Western groups.

As to the Eastern group of Kyzylbash, they are known to inhabit certain parts of the *vilayet* of Angora,¹⁰ and are admitted even by Turkish statistics to be numerous

¹ P. della Valle, *Viaggi* (Rome, 1658), ii, 46–7.

² Similarly, *dervish* is used of a person lax in the performance of his religious duties or suspected of free thought.

³ Vambery, *Turkenvolk*, 607.

⁴ See below, p. 329.

⁵ On the slopes of Mounts Tmolus and Sipylus and in the districts of Nymphi and Salikli.

⁶ At Denizli and Apa.

⁷ Περὶ Γιουρούκων, 29.

⁸ Hist. . . Othoman, tr. Jonquière, i, 179.

⁹ Durch Syrien und Kleinasien, 393.

¹⁰ Crowfoot in *J. R. Anthr. Inst.*, xxx (1900), 305–320; Perrot, *Souvenirs*, 423; Cuinet, *Turquie d'Asie*, i, 253.

in those of Sivas (279,834),¹ Diarbekir (6,000),² and Kharput (182,580).³ In the case of the Sivas *vilayet* the official figures represent them as exactly half as numerous as the *Sunni* Moslems, not only in the *vilayet* as a whole but in every *kaza* composing it. The inference is that they are in reality much more numerous than the government is willing to admit.

Grenard, the only writer who has treated the Eastern Kyzylbash area as a connected whole, estimates the total number of the sect as upwards of a million.⁴ Of these, he places 365,000 in the *vilayet* of Sivas (*kazas* of Sivas, Divrigi, Tonous, Yildizili, Hafik, Zileh, Medjid Euzu, Hadji Keui), 300,000 in that of Kharput, and 107,000 in that of Erzeroum (*sandjak* of Erzingian, especially *kazas* of Baiburt, Terdjian, and part of Kighi). It is thus in the "Armenian" *vilayets* that the "Kyzylbash" are strongest.

The great importance of Grenard's statistics consists in the fact that they clearly show the close geographical contact of the Kyzylbash communities of Western Kurdistan with those of Eastern Anatolia. We may probably assume that the Eastern Anatolian Kyzylbash are similarly connected with the more scattered communities of Western Anatolia.

The Kyzylbash religion, if we make allowances for variation due to locality and to the natural intelligence, candour and knowledge of different informants, is similarly homogeneous, though fluid; there are indications that the whole sect is linked together by its alliance with the Bektashi dervishes.

Thus, in Cilicia the woodcutter (*Takhtadji*) caste has embraced a form of the *Shia* faith and would be reckoned by the Turks as Kyzylbash: some have identified their religion with that of the Syrian Nosairi.⁵ In the province of Tekke (Lycia) the Kyzylbash are generally known as Takhtadji ("woodcutters") on account of their employment, but like the Kyzylbash elsewhere, they call themselves Allevi⁶ and are connected with the Bektashi order of dervishes,⁷ whose local centre is at

¹ Cuinet, *Turquie d'Asie*, i, 617; for further information on the Kyzylbash of this *vilayet* see van Lenne, *Travels in Asia Minor*, i, 30 (cf. Jewett in *Amer. Miss. Her.* liv, 109 f., Nutting, *ibid.*, lvi, 345, Livingston, *ibid.*, lxi, 246, Winchester, *ibid.*, lvii, 71; Prof. G. White (of Marsovan College), *Trans. Vict. Inst.*, xl (1908), 225–36 and *Contemp. Rev.*, Nov. 1913, 690 ff. Jerphanion's *Carte du Yéchil Irmaq* is the first attempt to show the distribution of the Kyzylbash villages.

² Cuinet, *op. cit.*, ii, 322.

³ *Ibid.*, ii, 412. Further information on the Kyzylbash of Kurdistan is given by Taylor in *J.R.G.S.*, 1865, 28 ff., 1868, 304 ff.; Perkins in *Amer. Miss. Her.*, lii, 296 f., liii, 304 ff.; Wilson in Murray's *Asia Minor* [63] and 276; Bent, *Report Brit. Ass.*, 1889; Huntington in *Geog. Jour.*, xx (1902), 186 ff.; Molyneux-Seel in *Geog. Jour.*, xliv (1914), 51 ff.

⁴ *Jour. Asiat.*, 1904 (x serie, iii), 521.

⁵ Tsakyrogloss, *op. cit.*, 18; but this identity is denied by F. Schaffer, *Cilicia (Petermann's Mitth., Ergänzungsheft*, cxli, p. 27).

⁶ On the Lycian Takhtadji see Bent, *J. R. Anthr. Inst.*, xx (1890), 269–76; von Luschan, *Lykien*, ii, 198–213; Cuinet, i, 855.

⁷ See below, p. 331.

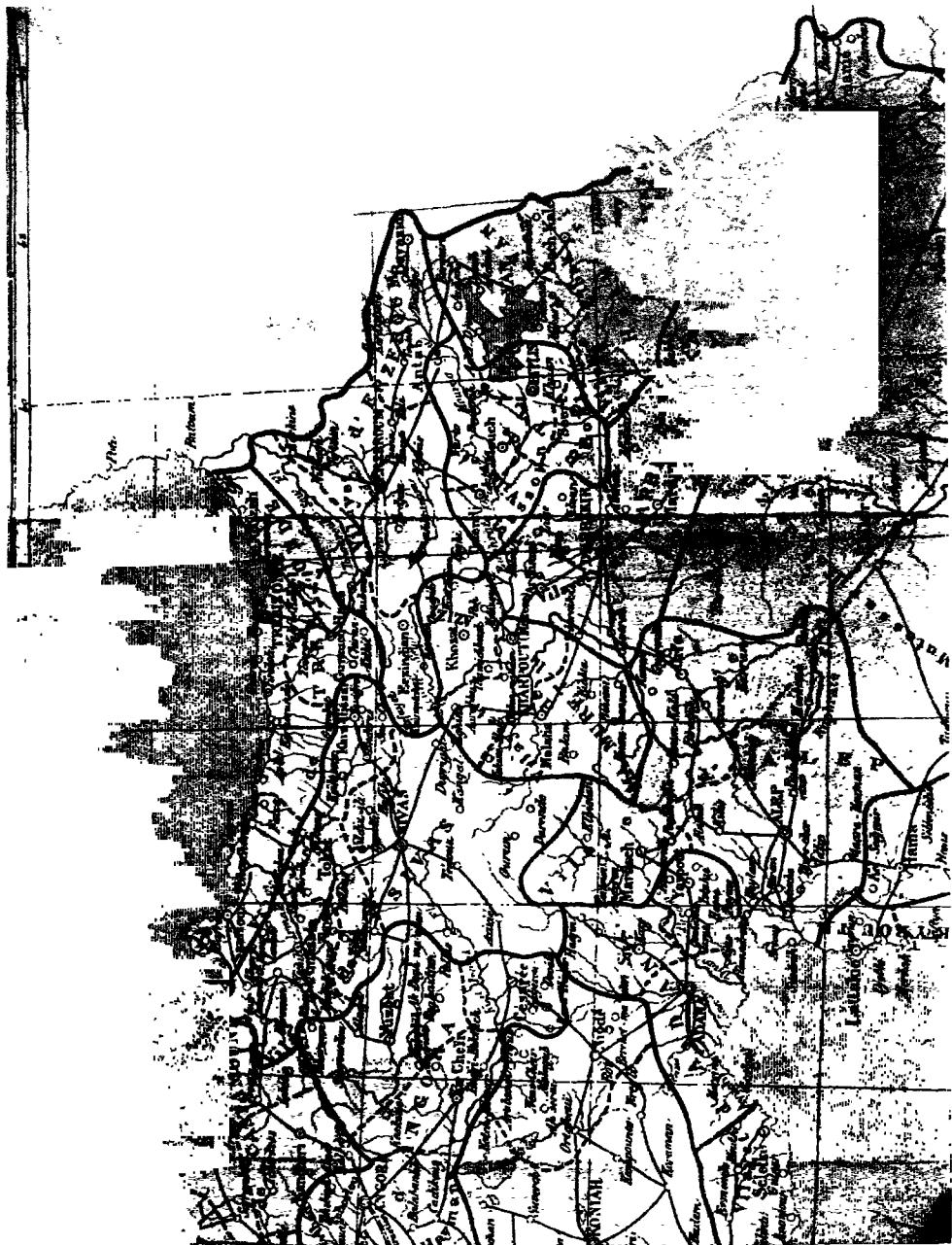


FIG. 1.—MAP SHOWING THE *villages* WHERE THE KYZYLBASH ARE MOST NUMEROUS (FROM CUINET, *Turquie d'Asie*, VOL. I).

Elmali. The Lycian Takhtadji are said to owe their conversion to *Shia* Islam to the missionary activity in the fourteenth century of sheikhs from Konia.¹

Side by side with the Lycian Takhtadji von Luschan found traces of what appeared to be a second heterodox sect, the Bektashi.² Similarly, Crowfoot, finding that the Kyzylbash of the Halys district (*vilayet* of Angora) hailed each other as "Bektash," suspected that this was the name of a local sect of Kyzylbash.³

The real explanation of the apparent second sect or subdivision lies in the close association of many Kyzylbash with the Bektashi order of dervishes. Lycia has long been a field of Bektashi propaganda, and the Kyzylbash villages of the Halys are not far from the central sanctuary of the Bektashi, near Kirshehr,⁴ which contains the tomb of their titular founder, Hadji Bektash, and is visited as a pilgrimage even by the distant Kyzylbash Kurds.⁵ The Bektashi-Kyzylbash of Lycia are probably Kyzylbash who have become affiliated as lay adherents (*mühib*) of the Bektashi order of dervishes.

As to the "Bektash" of the Halys district, which are nearer the Bektashi centre, they may either be inhabitants of villages forming part of the endowments (*vakouf*) of the *tekke* of Hadji Bektash, or, if (as I have suggested elsewhere)⁶ "Hadji Bektash" himself represents the original tribal-chief and medicine-man eponymous of a tribe Bektaşlı, they may be a portion of this tribe.

Kyzylbash, in the Turkish sense at least, are to be reckoned the inhabitants of certain heterodox villages in the Hermus valley, regarding the population of which Ramsay gleaned the following details. Like the nomads, they do not conform to orthodox Mahomedan custom in the details of veiling women, polygamy, abstention from wine, and worship in mosques. They fast twelve days in spring, their women are called by Christian names, they have no aversion to Christian holy books, and are visited by an itinerant holy man called a Karabash⁷ (Tk. "black head").

It happens that, among the Yezidi of Syria (Jebel Siman),⁸ there is a tribe possessing a kind of Levitical status and called Karabash.⁹ The Yezidi religion is, of course, known to contain Christian elements, and the Yezidi view of Christianity and the Bible is somewhat similar to that of the Kyzylbash. It would thus appear

¹ Von Hammer, *Hist. Emp. Ott.*, iv, 91 (from the sixteenth century Turkish historian Djenabi).

² Von Luschan, *Lykien*, ii, 203, note.

³ J. R. Anthr. Inst., xxx (1900), 305; cf. Grothe, *Vorderasiensexpedition*, ii, 148 note 4.

⁴ It has been visited by P. Lucas (*Voyage dans la Grèce*, Amsterdam, 1714, i, 124); G. Naumann (*Vom Goldenen Horn*, 195); and Prof. White (*Contemp. Review*, Nov. 1913, 690–98).

⁵ Molyneux-Seel, *Geog. Journ.*, xliv (1914), 66.

⁶ B.S.A., xxi (1914–16), 89.

⁷ Ramsay, *Pauline Studies*, 180 f. and *Intermixture of Races in Asia Minor*, 20.

⁸ This is a colony of their main settlement, grouped round the shrine of Sheikh Adi in the Mosul *vilayet*. For the Yezidi see Menzel in Grothe, *Vorderasiensexpedition*, i, lxxxix ff.

⁹ Jerphanion in *Mélanges de la Faculté Orientale* (Beyrouth), ii, 376. The Yezidi itinerant preachers wear black turbans (Hume Griffith, *Behind the Veil*, 288).

that the heterodox villages of the Hermus valley are connected with the Yezidi, which implies that they were converted or colonised from Syria. But it will be observed that the whole argument depends on the word “Karabash,” which is ambiguous, having been applied, till recently, to Christian monks and priests¹ (as wearing black caps) in general. It is safer to suppose for the present that the story is a garbled version of an annual visitation of Kyzylbash villages, which are known to exist in this district,² by Bektashi *sheikhs*.

The following is a summary of the information at our disposal on the religion of the Kyzylbash, compiled from several sources and referring chiefly to the Kyzylbash of the Kurdish and Armenian *vilayets*. It will be found that, although we have little exact information on the religion of the Lycian Takhtadji, what we have confirms the idea of their close religious connection with the Kyzylbash further East.

I. *Theology.*

God is one and omnipotent, without son or companion.³

Ali is God incarnate, identical with Christ, and will appear again.⁴

Ali is identical with Christ and is the spirit of God. “Ali is the best of men, excelling even Mohammed in goodness; if Ali had not existed, God could not have created the world, but Ali is emphatically not divine.”⁵

Ali is identical with Christ, but the Kyzylbash call him Ali to deceive the Turks.⁶

The Kyzylbash *Trinity* is perhaps Ali, Jesus and Mahommed (Father, Son and Holy Spirit respectively), but the intrusion of Mahommed, for whom they have no reverence, is to be suspected.⁷

Their prayers are directed chiefly to Allah, Ali and Hussein.⁸

The *Devil* is a person and is re-incarnated to oppose each incarnation of God: he is not worshipped.⁹

Intermediaries are the five archangels, twelve ministers of God, and forty prophets, including Selman. The prophet Khidr is identified with S. Sergius.¹⁰

¹ Cf. O. F. von Richter, *Wallfahrten*, 333; Fallmerayer, *Fragmente*, 125; also Schiltberger, *Reise*, ed. Penzel, 149, ed. Hakluyt, 74. Hammer mentions a Khalveti called Karabash (*Hist. Emp. Ott.*, xviii, 97 (805)).

² Above, p. 328.

³ Molyneux-Seel in *Geog. Journ.*, xliv (1914), 65.

⁴ Grenard in *Journ. Asiat.*, 1904 (x série, iii), 514 ff.

⁵ M. Sykes, *Dar-ul-Islam*, 121–2.

⁶ Dunmore in *Amer. Miss. Herald*, liii (1857), 219.

⁷ Grenard, *op. cit.*, 515.

⁸ Grothe, *Vorderasiensexpedition*, ii, 153.

⁹ Grenard, 516.

¹⁰ Grenard, 515, and (for the last part) Molyneux-Seel, 66.

The twelve Imams are the twelve Apostles ; Hassan and Hussein are SS. Peter and Paul.¹

The twelfth Imam is in hiding and the Kyzylbash await his coming.²

The great prophets are Jesus, Mohammed, Moses, Abraham and Ali.³

The great prophets are Adam, Moses, David and Jesus.⁴

The great prophets are Adam, Noah, Abraham, Moses, Christ, Mahomed and Ali.⁵

Moses, David, Christ and Ali are all incarnations of the same person.⁶

Jesus is the greatest of the prophets.⁷

The Virgin is regarded as the Mother of God and much venerated.⁸

II. *Mythology.*

When the Mahomedans of Damascus killed Hussein, the son of Ali, they cut off his head and carried it away. It was stolen from them by an Armenian priest, Akh Mrtouza Keshish, who substituted for it the head of his eldest son, at the proposal of the latter. As the Turks discovered the fraud, the priest cut off the heads of all his seven sons and offered each in turn as the head of Hussein. In the case of the last head he received a divine warning to smear it with the blood of Hussein and by this means deceived the "Turks" and kept the holy relic for himself.⁹

He placed it in a special apartment, which he adorned with gold and silver and silk. His only daughter, entering that apartment one day, saw not the head of Hussein but a plate of gold filled with honey. She tasted the honey and became with child. "One day the girl complained of a cold, and on sneezing her father saw suddenly issue from her nose a bright flame, which changed at the same instant into the form of a child. Thus did Imam Bakir, son of Hussein, come into the world."

¹ Molyneux-Seel, 66.

² Sykes, 122.

³ Sykes, 121.

⁴ Ellsworth Huntington in *Geog. Journ.*, xx (1902), 187.

⁵ Molyneux-Seel, 65.

⁶ Von Luschan, *Lykien*, ii, 201.

⁷ Huntington, 187.

⁸ Grenard, 515.

⁹ Molyneux-Seel, 64. A variation is related by White from the Cappadocian Kyzylbash country (*Contemp. Review*, Nov. 1913, 698) as follows :—"There is a story that when the great Ali was put to death by his enemies, his head by some chance was placed for safe keeping in the hands of a Christian priest. Afterwards the persecutors wanted it to gloat over it or abuse it, but the priest refused to deliver it up. On being pressed, he cut off the head of his eldest son and offered that instead, but it was refused. So he did with his second and other sons, to the number of seven. Then his wife asked her husband to cut off and offer her head. He did so, and this was accepted."

"The fact that a descendant of Ali had been born immediately became known to the sorcerers of the Turks, who thereupon sent people to search for the child and slay it. They came to the priest's house. At this time the young mother was engaged in washing the household linen, and, being told the reason of the visit of the Turks, hastily put her child into a copper cauldron which was on the fire and covered him with linen. The Turks knew by their magic arts that the child was in a house of copper, but unable to find any such house in the precincts of the priest's dwelling were baffled, and the child's life was saved. On account of this incident the child received the name of Bakir, which in Turkish means copper."¹

Ali as a child went to Khoubyar and was put into a furnace for seven days as his enemies wished to kill him.²

III. *Hierarchy.*

The priests are called *Dede*; above them are bishops and patriarchs. Of the latter there are two, one of whom resides in a *tekke* at Khoubyar, fifty-five kilometres North-East of Sivas. The patriarchs are descendants of Ali and infallible in doctrine.³

The religious head of the Kyzylbash resides in the Dersim.⁴

Priests are called *Seid*; above them are bishops (*Murshud*) and archbishops (*Murshudun Murshudu*). *Seids* give religious instruction and receive tribute.⁵

The Kyzylbash are visited once a year, but at no fixed time, by a *murshud*, who holds a service, recites the law, and gives definite readings and interpretations of the sacred books. If he pays a second visit in the year he holds no religious conversation.⁶

Priests are allowed to marry, but celibates enjoy greater prestige.⁷

Once or twice a year every village is visited by a *dede*, a kind of communion takes place, as also preaching, prayers, and a religious dance in which both sexes participate.⁸

The hierarchy is composed of *Deydees* and *Seyds*; the latter are hereditary, the former apostolically consecrated.⁹

Peripatetic *dedes* are mentioned by Grothe.¹⁰

¹ Molyneux-Seel, 65.

² Grenard, 518.

³ *Ibid.*

⁴ Oberhummer and Zimmerer, *Durch Syrien und Kleinasiens*, 394.

⁵ Molyneux-Seel, 64.

⁶ *Ibid.*, 66.

⁷ Prof. White in *Trans. Vict. Inst.*, xl (1908), 236.

⁸ *Ibid.*, 231.

⁹ Taylor in *J.R.G.S.*, xxxviii (1868), 319.

¹⁰ Grothe, ii, 155.

Among the Lycian Takhtadji every tribe, however small, has a *Baba* or *Dede*, whose office is hereditary.¹

IV. *Fasts and Feasts and Public Worship.*

The twelve days' fast and feast of Mohurrem is observed.²

They fast twelve days for the twelve Imams and three days for Khidr.³

They fast before Khidr's feast (February 9th) and at the Armenian Easter.⁴

"On the night of January 1st (O.S.)⁵ they meet at the house of the Seids for a ceremony resembling the Communion. After prayers the Seid blesses the bread, which is called *Haqq loqmase*,⁶ and distributes it to the communicants, who approach two by two. The blessed bread is not distributed to any person who may be declared by the inhabitants of his village to be unworthy. The communicants are called *Musseib*.⁷"

The Kyzylbash have neither mosque nor church, but both sexes meet for prayer at the house of the *Seid* on Fridays.⁸

They have a perverted mass : the priest chants prayers in honour of Christ, Moses and David. Water is consecrated by the priest dipping a stick into it. There is a public confession of sins, which are punished by fines : lights are put out while the congregation mourns its sins.⁹ When they are re-lighted, the priest gives absolution,¹⁰ and, having blessed bread and wine, gives a sop to the congregation. Morsels (*loqma*) of the flesh of a sacrificed lamb are given at the same time. Known evil livers are not admitted to the service.¹¹

As to the consecrating of water the following is informing :—"All the Seids keep with them a certain stick and a leather bag, about the uses of which there is some mystery, and which are said to be employed in the performance of certain pagan rites. However, the Seids say that the stick is a portion of the rod of Moses, and the bag an imitation of that carried by St. John the Baptist."¹²

¹ Von Luschan, ii, 201.

² Grenard, 514 ; Sykes, 122.

³ Molyneux-Seel, 66.

⁴ Grenard, 518.

⁵ This is one of the days on which the Nosairi celebrate their communion, the others being Christmas, Epiphany and the Persian New Year (*Nevrouz*). For some notes on Nevrouz, see Goldziher in *Rev. Hist. Rel.*, ii (1880), 308–9.

⁶ "Morsel of the Just" (*i.e.* God).

⁷ Molyneux-Seel, 66.

⁸ Molyneux-Seel, 66.

⁹ Cf. Grothe, ii, 155.

¹⁰ Confession and absolution ceremonies exist also among the Lycian Takhtadji (von Luschan, ii, 202).

¹¹ Grenard, 517. A "sort of sacrament" is reported of the Eastern Kyzylbash by Huntington (*loc. cit.*, p. 188), a communion of bread and wine by White (*Contemp. Review*, Nov. 1913, 696).

¹² Molyneux-Seel, 66.

V. Private Prayer.

Private prayer is enjoined once a day. This prayer is secret, but contains reference to all the great prophets.¹

They pray privately every morning.²

They never pray in private.³

They adore the sun rising and setting,⁴ reverence fire, and sacrifice at the sources of rivers, in particular that of the Mezoor.⁵

VI. Sacred Books.

The Kyzylbash have no sacred books, but recognise as inspired the Pentateuch, the New Testament, and the Koran.⁶

They admit the five collections of Traditions, but do not recognise Jews or fire-worshippers as “People of the Book.”⁷

They have four holy books, which are the Gospels.⁸

They have two books, the *Bouyourouk*,⁹ which contains selections from the Old Testament, and the *Yusef Kitab*,¹⁰ which contains extracts from the New Testament.¹¹

They have a book, which is only in the possession of the priesthood, but it does not seem to be a *corpus* of dogma.¹²

The Lycian Takhtadji claim to have a book.¹³

VII. Pilgrimage.

The Kyzylbash do not make pilgrimage to Mecca but to the *Shia* sanctuaries of Bagdad, Kufa and Kerbela, and to certain Anatolian holy places, the most

¹ Sykes, 121.

² Molyneux-Seel, 66.

³ Huntington, 187.

⁴ Cf. the similar custom of the Yezidi, mentioned by W. B. Heard in *J. R. Anthr. Inst.*, xli (1911), 213.

⁵ Taylor, *J.R.G.S.*, xxxviii (1868), 320. A local legend connects the source of the Mezoo, with a shepherd saint of the same name, who is said to have disappeared there (Molyneux-Seel loc. cit., 60). It is probably a nature cult anthropomorphised.

⁶ Molyneux-Seel, 66. Van Lennepe says vaguely that they read the Christian scriptures (*Travels in Asia Minor*, 30 ff.).

⁷ Sykes, 122.

⁸ Huntington, 187. This author recognises that the Kyzylbash, when questioned as to their religion by Christians, colour their answers to make its analogies to Christianity closer. This seems to be an extreme case.

⁹ [“Book of Commandments” from *bouyourmag* = to command.—M.M.H.]

¹⁰ [“Joseph’s book.”—M.M.H.]

¹¹ Dunmore in *Amer. Miss. Her.*, liii (1857), 220.

¹² Grothe, ii, 151, 154.

¹³ Von Luschan, ii, 200. Mills records an attempt in 1841 to convert the Samaritans forcibly on the plea that they had no book. The Jews got them off on the plea that they accept the Pentateuch (*Three Months*, 277 ff.).

important being Hadji Bektash (near Kirshehr), the centre of the Bektashi dervishes, and a reputed tomb of Hassan at Sivas.¹

IX. Marriage.

The Kyzylbash may marry three wives; divorce and temporary marriage are prohibited. An unfaithful wife may be killed.²

Divorce is prohibited. Armenians are accepted as *parrains* at marriages.³

Divorce is prohibited.⁴

Strictly the Kyzylbash are only permitted to take one wife, but many have lapsed into polygamy. The peripatetic *dede* presides at marriages when possible.⁵

Prostitution of virgins to guests, and especially to itinerant *dedes*, is recorded, on the authority of a bigoted *Sunni*, by Grothe.⁶

Among the Lycian Takhtadji marriage between brother and sister is permitted.⁷

It is fairly apparent that the predominating element in the Kyzylbash religion is *Shia* Mahomedanism, and the secondary Christian, the whole having a substratum of pagan animistic elements,⁸ many of which might be found in slightly changed form among professedly orthodox Turks or oriental Christians. On the *Shia* side note the exalted position held by Ali, Hassan and Hussein, and the importance of their pilgrimages, as compared with the neglect of Mahomed and Mecca: note also the importance of the *Imams* and the Second Advent. The Christian elements, apart from the formal identification of *Shia* with Christian sacred figures, reduce themselves to the celebration of certain Armenian feasts, and the ritual of the "perverted mass." It should be noted that the "ritual meal" is an idea by no means foreign to Islam,⁹ the Semitic element being, as in Christianity, partly responsible. Nor must it be overlooked that one of the prototypes of the Christian communion is found in Persian Mithraism.

As regards the hierarchy it seems clear that the parish priest, who is generally called *Seyid* by our authorities, is normally married, his office being hereditary, and he himself, as his name implies, a descendant of the Prophet and therefore of

¹ Molyneux-Seel, 66. This is presumably the tomb of the Holy Children (*Maksoum Pak*), discovered in recent times in the town of Sivas. The Holy Children are not Hassan and Hussein but the infant sons of two of the *Imams*: the confusion in popular thought is natural (see F. W. Hasluck in *B.S.A.*, xxi, 1914–16, pp. 95–6 and 96, n. 1).

² Sykes, 121.

³ Grenard, 518, 521.

⁴ Taylor, 319.

⁵ Grothe, ii, 154.

⁶ *Vorderasienexpedition*, ii, 150.

⁷ Von Luschan, *Lykien*, ii, 199.

⁸ Grenard, *loc. cit.*, brings this out in detail.

⁹ G. Jacob in *Der Islam* (ii, 232) for "Bektashi" communion.

Ali. A celibate monk can, however, as in oriental Christianity, officiate, if in orders, as parish priest.

The peripatetic “bishop” or *murshud*¹ seems to be a (celibate?) dervish of the Bektashi order. On this point Tsakyroglous, speaking of the Kyzylbash in general but probably more particularly of those in his own *vilayet* of Aidin, is very explicit. He says that the communities are visited yearly by Bektashi sheikhs, who confess, catechise and instruct their flocks.² Professor White, speaking of Pontus, says that the Kyzylbash villages there are organised in groups, each group having its *tekke* of dervishes.³

The “patriarchs,” of whom one resides at Khoubyar (the other is probably the “Tchelebi” of the Bektashi⁴) are again hereditary (the “Tchelebi” certainly), their descent being important. The doubling of the office reminds us of the Armenian and Greek churches.

Certain points in the Kyzylbash system, mostly negative, sever them from, and form a stumbling-block to, their *Sunni* neighbours. Thus, they do not conform to *Sunni* practice in the matter of veiling women, the five prayers, circumcision and other religious duties; they are said to eat pork and drink wine, to marry, within the prohibited degrees, and to indulge in immoral orgies, men and women being assembled in a great room in which the lights are suddenly extinguished. This is evidently a prejudiced version of the “perverted mass” ceremony described above. Impartial investigators have found that, while marriage between brother and sister is countenanced by them,⁵ they are very strict about divorce and monogamy, and the grave charge of promiscuity, which has been much exploited by (chiefly ignorant) *Sunni* partisans, and has earned for the Kyzylbash the opprobrious nicknames of *Zerati* and *Moumsunderen* (“candle-extinguishers”⁶), is generally thought to be a calumny.

The same charges of incest and promiscuity are brought against the Druses by Benjamin of Tudela in the twelfth century,⁷ and the latter in modern times by

¹ The word is in general use amongst dervishes for a “spiritual director”; every *sheikh* of a convent, for instance, is a *murshud* in relation to his pupils (*chaguir*).

² Περὶ Γιουρούκων, 30:—Ἐκ τῆς μονῆς ταύτης (sc. τοῦ Χατζῆ Βέκτας) ἐξέρχονται ἑτησίως εἰς περιοδείαν Σεΐχαι ἐπισκεπτόμενοι τὰς κάμας καὶ τά χωρία ἔνθα ὑπάρχουσι κοινότητες τῶν Κιζίλ-μπάς, ἐξομολογούσιν αὐτοὺς, κατήχουσι καὶ ποδηγετούσιν αὐτοὺς εἰς τὴν ὁδὸν τῆς ἀληθείας καὶ ἔχοντες συνάμα δικαστικὴν οὐτως εἰπεῖν δικαιοδοσίαν ἐξομαλύνουσι δηγέρεις καὶ διαφορὰς ὑφιστάμενας μεταξὺ τῶν κοινοτήτων, οὗτοι ἐν τέλει λαμβάνονται παρ’ αὐτῶν καὶ τὸ ἑτησίως ὥρισμένον δημάριον.

³ *Trans. Vict. Inst.*, xl (1908), 231.

⁴ Cf. White in *Contemp. Rev.*, Nov. 1913, 693. But Oberhummer speaks of a supreme religious head of the Kyzylbash as resident in the Dersim (*op. cit.*, 394).

⁵ Von Luschans, ii, 199.

⁶ Rycaut, *Present State* (1687), 65: cf. Niebuhr, *Reisebeschreibung*, iii, 125. On *zerati* see Gibb, *Ottoman Poetry*, i, 358.

⁷ *Travels*, ed. Asher, 61–2, ed. Wright, 80. For the same charge against the Nosairi of Syria see Niebuhr, *Voyage en Arabie*, ii, 361.

the Arabs against the fire-worshippers¹ as by the “Old” Turks against the Crypto-Jews of Salonica.² The truth seems to be that the Turks are extremely strict about the degrees of consanguinity,³ and that some Kyzylbash infringe their rules. As a matter of fact, as we have seen above, the marriage laws of the Dersim Kyzylbash at least are in some respects much stricter than those of orthodox Islam. For the rest, Kyzylbash laxity in the veiling of women and the fact that the sexes unite in an act of worship, of which no more is known than that it is unorthodox, are sufficient basis for a wholesale slander.

A certain amount of official pressure is exerted to convert the Kyzylbash to the orthodox faith of Islam. To them, as to the Yourouks of Ida, *Sunni* missionaries are sent to preach during the month of Ramazan, and mosques are occasionally built in their villages by government orders.⁴ The Pontic Kyzylbash, according to Professor White, are to some extent organised against government aggression. Some years ago, it is said, a rumour became current that the documents of the Kyzylbash religious foundations (*vakoufs*) were required at Constantinople: the leaders of the sect warned their communities to be ready to resist, and no steps were taken by the government.⁵

As regards the connection between Christianity and the religion of the Kyzylbash the latter claim that there is very little difference between the two faiths;⁶ they are certainly in their personal relations more sympathetic to Christians than to *Sunni* Mahomedans. An *aga* of Kyzylbash Kurds was actually converted to Christianity by American missionaries in the fifties.⁷

An obvious link between the two religions is the fact that both are regarded as inferiors, socially and politically, by the dominant *Sunni* religion. Further, we have found that the Kyzylbash celebrate certain Armenian feasts and are thickest in the “Armenian” *vilayets*. A number of traditions also connect the two. Thus, the Kurdish, and probably also the Anatolian, Kyzylbash represent their *Imam* as

¹ Jerphanion in *Mélanges de la Faculté Orientale* (Beyrouth), ii, 405.

² Mécheroutiette (an organ of the Turkish Liberal party), 1914, p. 16. The same is alleged of the Russian Tatarinof sect (see A. Dumas, *Russie*): one of their number confessed this, but *under torture*. Early Christian heretics were accused by the orthodox of the same crime (Strack, *Blutaberglaube*, 71); pagans said the same of Christians (Kortholt, *De Calumniis Paganorum*, Kiel, 1668). Thévenot records that the vagabond *Hhoüames* of Egypt practised promiscuity (*Voyages*, ii, 852), but any mixed gathering was liable to the suspicion: cf. the accounts of the Easter Fire ceremony at Jerusalem in d’Arvieux, *Mémoires*, ii, 142; Faber, *Ecclesiastical History*, ii, 92; Maundrell, *Travels*, ed. Wright, 182. Cf. also what Lucius says of the festivals of martyrs in early times (*Anfänge des Heiligenkults*, 319–23). In the case of Jerusalem there is also an idea that a child begotten in such circumstances and surroundings is particularly fortunate (Tobler, *Bethlehem*, 75, 139; Tobler, *Golgatha*, 427).

³ Cf. Le Bruyn, *Voyage au Levant*, i, 405.

⁴ White in *Trans. Vict. Inst.*, xl (1908), 228.

⁵ *Ibid.*, 235: too much stress will not be laid on this story by those who know the country.

⁶ *Ibid.*, 231.

⁷ Dunmore in *Amer. Miss. Herald*, liii (1857), 219 f.

born of the virgin daughter of an Armenian priest.¹ The Armenians on their side claim the Kyzylbash Kurds as perverted co-religionists.²

Other examples of traditions recording the conversion of Armenians *en bloc* to Islam are to be found in the cases (1) of a tribe classed as Turcoman and called Pehlivanli, settled between Sivas and Angora³ (a "Kyzylbash" country, be it remarked), and (2) of the Mahalemi "Kurds," who are said to have been converted "two hundred years ago."⁴

According to Mrs. Scott-Stevenson the (*Sunni*) Afshars⁵ of the Anti-Taurus claim Armenian descent,⁶ which, though probably false of the Afshars as a whole, may still be true of some sections of the tribe. Tchihatcheff's picture of Pharasa (a Greek village of the Anti-Taurus) in the fifties, ruled by Afshar chiefs and taking part with them in their forays against the Turks,⁷ may show a phase in such a development.⁸ As regards the Kyzylbash, it is important to note that all traditions speak of them as converted Armenians, not Greeks.

It must not, however, be imagined that the question of the "Kyzylbash" religion is finally disposed of by classing it as *Shia*, since the *Shia* religion is subdivided into numerous sects and heresies. Sir Charles Wilson compares the religion of the Anatolian Kyzylbash, not with that of orthodox Persian *Shias*, but rather

¹ Above, p. 333.

² Molyneux-Seel in *Geog. Journ.*, xliv (1914), 64–7: cf. Huntington in *Geog. Journ.*, xx (1902), 186.

³ Niebuhr (who had it from Patrick Russell of Aleppo), *Voyage en Arabie* (Amsterdam, 1780), ii, 341.

⁴ Sir Mark Sykes in *Geog. Journ.*, xxx (1907), 387. Both these and the Pehlivanli (Niebuhr, *Voy. en Arabie*, ii, 341) are said to have turned Musulman on account of the severity of Armenian fasts. The *motif* is a "stock" one (cf. Pococke, *Descr. of the East*, ii, 133; G. Kammas, Μικρασία, 'Ημερολ. 1915, p. 281), but the conversion may nevertheless be a fact: on the other hand it may be merely a reflection on the character of the tribes in question, put into currency by rivals or enemies. The Maronite villages are said to convert regularly to Protestantism when oppressed by their priests: when this pressure has gained them their point, they as regularly revert to Catholicism (Mrs. Mackintosh, *Damascus*, 286). If it were as easy and safe to revert from Islam as from Protestantism, we should doubtless find fewer Moslems in Turkey at the present day: cf. the cases of the Presba villages (Bérard, *Macédoine*, 20), of the Karamuratadhes (Pouqueville, *Voyage dans la Grèce*, i, 259–61), and of the Valachadhes (Bérard, *Macédoine*, 110; Wace and Thompson, *Nomads of the Balkans*, 29).

⁵ For the Afshars see Grothe, *Vorderasiensexpedition*, ii, 135 ff.

⁶ *Our Ride through Asia Minor*, 218. Others have called them renegade Greeks (Tsakyrogloous, Περὶ Γιουρούκων, 13).

⁷ Tschihatschew's *Reisen in Kleinasiien*, ed. Kiepert, 14. We may compare the conditions noticed in the early years of the nineteenth century by Burckhardt in the Cilician plain (Barker, *Lares and Penates*, 355 ff.). Here the Greek villages were subjected to Turcoman chiefs and had largely assimilated themselves to their protectors.

⁸ The recent ("fifty years ago," i.e. about 1830) conversion of Burunguz, an Armenian village near Tomarza, in the district of Cæsarea, noted by J. F. Skene (*Anadol*, 175), is worth putting on record in this connection: both period and locality point to the Afshars as the "missionaries" responsible for the change.

with that of the Nosairi of Syria¹. Bent, speaking of the Takhtadji in particular, classes their religion with that of the Nosairi and Yezidi,² and von Luschan³ and Oberhummer⁴ are of the same opinion. It cannot be expected that the religion practised by these scattered and possibly heterogeneous communities is identical. But in the present vague state of our knowledge it would be worse than useless to attempt a more exact classification.

It is at least fairly clear that the Kyzylbash religion from Mardin and Erzeroum to Smyrna is identical in its main lines and an offshoot of *Shia* Islam containing considerable elements of Christianity, with an animistic basis, according to Grenard's information, and that the Bektashi, the only dervish order in Turkey openly professing the *Shia* faith, form a sort of hierarchy among a large proportion of the Kyzylbash populations. The inheritance of the Bektashi, whatever its origin, is explained by the fiction that the tribal saints of the various Kyzylbash villages were "brothers," "companions" or "disciples" of Hadji Bektash.⁵

Von Luschan has already established the important point⁶ that the similarities of religion between the "Kyzylbash" group (including "Bektash" and "Takhtadji") in Anatolia coincide with anthropological similarities which connect this group also with the North Syrian and North Mesopotamian heterodox sects (Yezidi, Nosairi, etc.), with the Armenians, with certain types of Anatolian Greek, and with the Hittites.

The locality in which this anthropological type is most frequent is the mountainous "bridge-land" which lies between the fertile countries of Anatolia, Persia, Mesopotamia and Syria. This "bridge-land" has never been civilized, though it has been penetrated at various times by missionaries, religious, political and military: in particular, being the old border-land between Turkey and Persia, it was naturally the resort of Persian emissaries during the long wars of the two nations. The result of the presumed religious propaganda carried on from the side of Persia among still pagan nomads, Kurdish and Turkish, possibly also among Armenian Christians,⁷ is a patchwork of religious compromises, of which the outwardly predominating elements are *Shia* Islam and Armenian Christianity, among a people of marked physical homogeneity.

A certain proportion of these peoples has migrated westwards, as probably in other directions, either from natural causes or under the pressure of the artificial transplantation, which was carried out in the sixteenth century by the Ottoman

¹ *Geog. Journ.*, vi (1884), 313.

² *J. R. Anthr. Inst.*, xx (1890), 270.

³ *Reisen in Lykien*, ii, 202.

⁴ *Durch Syrien*, 394.

⁵ See *B.S.A.*, xx (1913–14), 98 and xxi (1914–16), 96.

⁶ *J. R. Anthr. Inst.*, xli (1911), 241 f.

⁷ Or the conversion of the latter may be attributed to the persecution of already converted Kurds and Turks.

government¹ as a means of breaking up the solidarity of border-tribes known to be *Shia* in religion and consequently in sympathy with Persia. The emigration process may have gone on for centuries, the emigrants from the mountainous "bridge-land" sometimes amalgamating with the men of the plains under the influence of a prevalent civilisation, sometimes keeping themselves aloof owing to religious or other differences. The "bridge-land" type, when found in the west, may thus represent immigrations of widely different date, ranging from remote antiquity to comparatively modern times.

¹ Cf. Belon, *Observations de Plusieurs Singularités*, iii, cap. xii.

DESCRIPTION OF A HUMAN CRANIUM DREDGED FROM THE BED OF
THE RIVER TRENT, AND A COMPARISON OF THIS WITH ANCIENT
AND MODERN BRITISH SKULLS.

By REGINALD J. GLADSTONE, M.D., F.R.C.S., Lecturer on Anatomy, University of London, King's College.

IN the summer of 1916, while dredging for sand in the bed of the River Trent, opposite the village of Kelfield, a peat-stained cranium was brought up from a depth of six to eight feet below the level of the river bed. With the skull there were also dredged up from the same place a number of animal bones, among which was a large vertebral column, shaped like that of a bird, but of very unusual size. The man employed in the dredging operations, who was an expert eel catcher from the neighbouring village of Susworth, suggested that the bones did not belong to any existing animals that he knew. Unfortunately the animal bones were not preserved, but Mr. T. B. F. Eminson, M.R.C.S., of Scotter, Gainsborough, to whom the man gave the skull several weeks after he had discovered it, wrote to me that the impression which he received from the man's description of them at the time was that they were a collection of prehistoric bones, which were either washed by the river from peat deposits into a pocket where the river bends at Kelfield Carnet, or that they lay in the sand or gravel beneath the peat.

The layers which were traversed in the dredging operations consisted of :—

- (1) Some warp mud.
- (2) A layer of black peat.
- (3) Four feet of sand, such as was being dredged for.
- (4) An unknown depth of river gravel.

The dredger believed that the skull was brought up from six to eight feet below the bed of the river, either from the layer of sand under the peat or from the river gravel beneath the sand, a statement which receives confirmation from the presence of pebbly gravel, which is still to be seen in the alveoli of the teeth and sinuses.

Unfortunately the dredging which was undertaken to procure sand for munition works has been discontinued, and as the animal bones which were left upon the warp bank of the stream would most probably all have been washed back into the river with the next high tide, there is now little chance of obtaining any of these bones for identification, or of procuring other bones of the human skeleton.

SITE OF THE DISCOVERY AND GEOLOGICAL CONSIDERATIONS.

The exact spot where the bones were found was in the river bed where the Trent makes a turn eastward, opposite Kelfield Carnet, and about fourteen miles distant from the outflow of the river into the estuary of the Humber (Fig. 1). The

dredger at the time was working about midway between the centre of the stream and the Kelfield bank. There is a convenient landing-place here, and Mr. Eminson informs me that "it was a famous site on the river near one of the Domesday fisheries, belonging to Scottar Manar." Mr. Eminson further tells me that the lower valley of the Trent, where the bones were found, is believed to have run in its present course for many thousands of years, although in remote ages the river ran into the Wash. The valley is wide, and even now is for fifteen miles or more below the level of high tides, for a width of from half to one mile. Mr. Eminson also mentions that the river

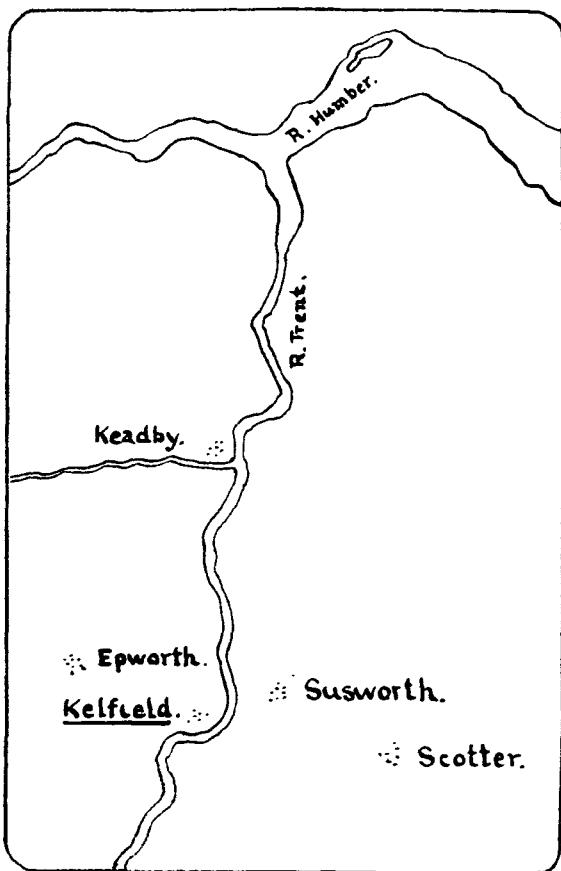


FIG. 1.

may have changed its course within the present valley more than once, for there is good reason to suspect that the river once ran through a lagoon, which was gradually warped up or filled with blown sand, for "æolian" dunes occur throughout the whole length, interspersed with deposits of peat.

OTHER HUMAN REMAINS WHICH HAVE BEEN DISCOVERED IN THE NEIGHBOURHOOD.

Mr. Eminson further tells me that there have been at least two instances in this valley in which complete British female bodies have been dug from the peat

in a perfect state of preservation, even to the clothing of skins and sandals, and he suggests that the individuals to whom the Kelfield skull belongs may have been buried in the sands or gravel below the present layer of peat ages ago, at a period when the river ran over a different site, and in a place which has now become submerged owing to the river having changed its course.

Other skeletons which appear to be of more recent date have been found in considerable numbers in the neighbourhood. Some of these discovered in the gravel of Scotter Green and at Brandiscroft are believed by Mr. Eminson to be "pit burials," which took place at the time of the "Black Death" in 1649. Another skeleton was found in a stone grave along with an iron spearhead and a knife or dagger. The grave was discovered in a field (anciently Oxe pasture) at the south end of Scotter. The district being formerly known as Gravell Hill, Mr. Eminson believes that the weapons found with this skeleton indicate that it was an early Anglian grave, and he further states that similar graves have been discovered near the same Gravell Hill at different times, and in each instance the head and trunk were enclosed in upright stones.

Replying to enquiries which I made with regard to the discoveries of the more ancient human remains, Mr. Eminson furnished me with the following interesting particulars :—

¹(1) In 1802 an oaken statue six feet high and as black as ebony was found in Haxey, the ancient capital of Axholme, several feet below the surface. It represented a warrior with bow slung over his shoulder, and an arrow in his right hand ; and some years since the body of an ancient British female, quite perfect and dressed in skins, sandals, etc., was disclosed in the turf ground in this parish (Haxey Turbory).

²(2) Another body was found "in the township of Amcotts and parish of Athorpe in 1747. The body was erect ; the nails, hair and skin preserved, but the bones fell out on removal, leaving the skin like a muff." The sandals were examined by experts on behalf of the Royal Society, and their date was thought to be possibly that of the "Conquest." No coins or other articles which might give a clue to the date were found.

White believed the former to have been an ancient British woman, and the latter Mr. Eminson regards as probably mediæval. He further believes that in neither case was there a burial, and that these and another case which he mentions, which were all found in the peat, had probably been engulfed by accident.

Mr. Eminson has two bronze celts found in Messingham parish, two miles from Scotter, and some years ago a patient of his, in the same parish, showed him a beautiful bronze spearhead in perfect condition, which he had ploughed up in a peaty field, a part of the old West Common of Messingham, and about three miles from the river. A few stone celts have also been found in the neighbourhood. Mr. Eminson also

¹ White.—Lincolnshire Directory.

² Philosophical Transactions, *Gentleman's Magazine*, Vol. XIX, p. 203.

possesses part of the stern end of a “dug-out” boat, which was found about eighteen feet below the top of the Trent bank, when excavations were being made for building a warping bridge.

DESCRIPTION OF CRANUM.

Before giving a detailed account of this Kelfield skull, it will be advisable to consider certain general characters which, taken together with the history of its discovery, will from the outset be of considerable value in attempting to determine its age and racial affinities.

- (1) It is of large size, as indicated by its capacity of 1,660 c.c.
- (2) It is brachycephalic, having a breadth-index of 81·3.



FIG. 2.—KELFIELD SKULL, *norma frontalis*.

- (3) The walls of the cranium are thin.
- (4) The facial part of the skull and more particularly the palate and superior alveolar arch are of relatively small size in comparison with the cranium.
- (5) It is stained of a deep walnut-brown colour by peat.
- (6) It is so impregnated with mineral matter that when it is hit with a hard object it emits a sound like that of earthenware when similarly struck.

Norma frontalis.

When viewed from the front (Fig. 2), the frontal region is seen to be wide, to rise almost vertically, and to pass by full-rounded borders into the vault and sides. The central part, however, is flattened so that the skull can be balanced in a vertical

position on the frontal and nasal bones. The supraciliary ridges, distinct, though not prominent, are arched, and lie well above the supraorbital margins. They do not cross the middle line, and they do not extend outwards to the external angular processes.

The orbital cavities are large and quadrangular. The supra- and infra-orbital margins are sharp and well defined. The proportion of the width (39 mm.) to the height (35 mm.) of the apertures gives an orbital index of 89·7. They thus fall into the category of "megaseme," or, according to Professor Sergi's more rational nomenclature, "ipsiconchic," signifying high orbits. Professor F. G. Parsons (24) estimates the average vertical diameter of the orbit in fifty typical British male skulls as 34 mm. and in 50 female skulls as 33 mm.

Evatt's "basic angle" of the orbit (9) (Fig. 3) is 19°. This is only 2° 18' below the maximum angle which at the date of publication Evatt had observed in any human skull. This greatest basic angle, 21° 18', was obtained from the skull of a male negro. This is somewhat surprising, as "Ithybasis," or forwardly directed eye-

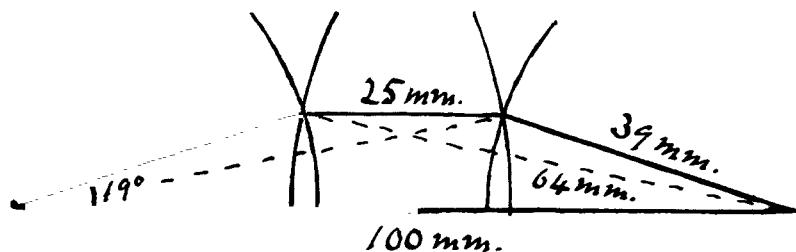


FIG. 3.—"BASIC ANGLE" OF ORBIT.

sockets, in which the angle is low, is a characteristic feature of the Simian skull. The bridge of the nose is somewhat flattened. The interorbital width between the upper ends of the lachrymal crests is 25 mm. The minimum interorbital width is 22·5 mm. Both these measurements are considerably above the average of typical British skulls, the minimum inter-orbital diameter of which Professor Parsons gives as 20 mm. for the male and 19 mm. for the female. The nasion is situated 4 mm. above a line drawn horizontally between the external angular processes, and a line passing from the nasion to the external angular process forms with the above-mentioned horizontal line an angle of 5°.

The maxillæ and zygomatic bones are small and slender, and the pyriform aperture is of small size. A deep depression is present between the overhanging supraorbital ridges and the nasal bones. This depression is characteristic of the "Cro-Magnon" type, and certain Bronze-Age and Mongoloid crania.

The "nasal index"—

$$\frac{\text{Nasal breadth } 24 \text{ mm.} \times 100}{\text{Nasal height } 51 \text{ mm.}} = 47.$$

Comparing this figure with the average nasal index of some Bronze-Age, Anglo-Saxon and Jutish skulls recorded by Parsons (25), it will be seen that the Kelfield skull lies between the Bronze Age and Anglo-Saxon, and corresponds with his Jutish average.

In 7 Bronze Age ♂ the nasal index was 46.

,, 8 Anglo-Saxon ♂ „ „ 48.

,, 5 Jutish ♀ „ „ 47.

The proportions of the anterior region of the nose, and the relations of this to the lower margins of the orbital cavities, are well shown by the use of Professor J. Cameron's (3) rectangles (Fig. 4), and expressed by his naso-orbito-alveolar indices :—

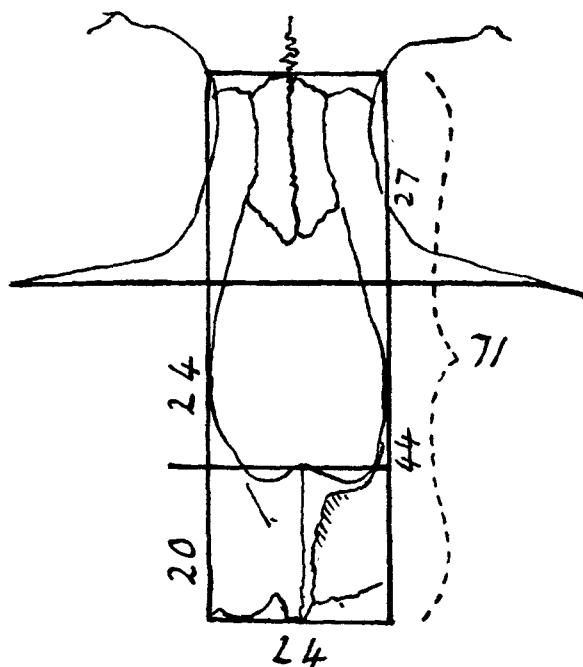


FIG. 4.—NASO-ORBITO-ALVEOLAR INDICES.

Complete rectangle.

$$\frac{\text{Nasal width } 24 \text{ mm.} \times 100}{\text{Nasion to alveolar point } 71 \text{ mm.}} = 33.8.$$

Upper rectangle.

$$\frac{\text{Nasal width } 24 \text{ mm.} \times 100}{\text{Nasion to infraorbital plane } 27 \text{ mm.}} = 88.8.$$

Middle rectangle.

$$\frac{\text{Nasal width } 24 \text{ mm.} \times 100}{\text{Infraorbital plane to akanthion } 24 \text{ mm.}} = 100.$$

Lower rectangle.

$$\frac{\text{Nasal width } 24 \text{ mm.} \times 100}{\text{Akanthion to alveolar point } 20 \text{ mm.}} = 120.$$

Infraorbital index.

$$\frac{\text{Infraorbital plane to alveolar point } 44 \text{ mm.} \times 100}{\text{Nasion to alveolar point } 71 \text{ mm.}} = 61.9.$$

It will be noted that the Kelfield skull, judged by the value of these indices, approximates closely to the type which is described by Professor Cameron as characteristic of European and of Ancient Egyptian skulls.

Norma lateralis.

One of the most noticeable features of this aspect of the skull (Fig. 5) is the large size of the cranial segment of the skull as compared with the facial. Although high, the vault of the cranium when viewed from the side is seen to be somewhat flattened at the summit, and that the outline of the central part passes by full-rounded angles into the frontal and occipital regions, both of which are also some-

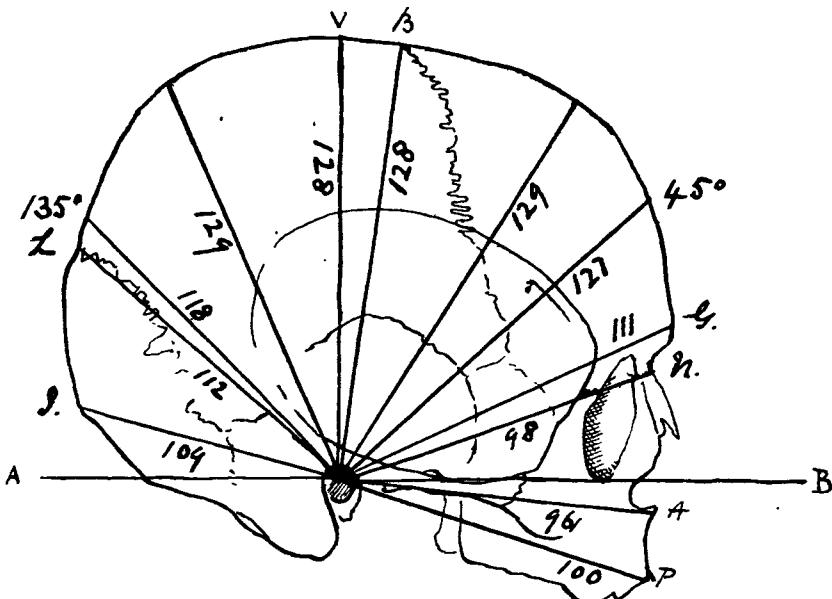


FIG. 5.—KELFIELD SKULL, *norma lateralis*.

what flattened and rise more vertically than in the typical modern British skull, in which the curve of the longitudinal arc is much more uniform.

The cranial height index—

$$\frac{\text{Basion to bregma } 139 \text{ mm.} \times 100}{\text{Glabella to occipital point } 187 \text{ mm.}} = 74.3.$$

The skull is thus metrio- or ortho-cephalic.

The auriculo-bregmatic index—

$$\frac{\text{Centre of external auditory meatus to bregma } 128 \text{ mm.} \times 100}{\text{Glabella to occipital point } 187 \text{ mm.}} = 68.4.$$

The auriculo-bregmatic index of the Kelfield skull, 68.4, corresponds very closely with the average of sixteen Bronze-Age skulls from the Royal College of Surgeons, estimated by Parsons as 68, and is considerably higher than the average of 20

Saxon skulls recorded by the same writer, viz., 65 (13 ♂, 7 ♀). In two Broadstairs Bronze-Age male skulls this index was as much as 73. A high auriculo-bregmatic index thus appears to be a characteristic of Bronze-Age skulls.

Other points to be noted on viewing the skull from the side are the small size of the mastoid processes, and the slender zygomatic arches. The temporal fossæ and pterygoid processes are also small, indicating that the muscles of mastication were not strongly developed, and giving a feminine appearance to the skull. The

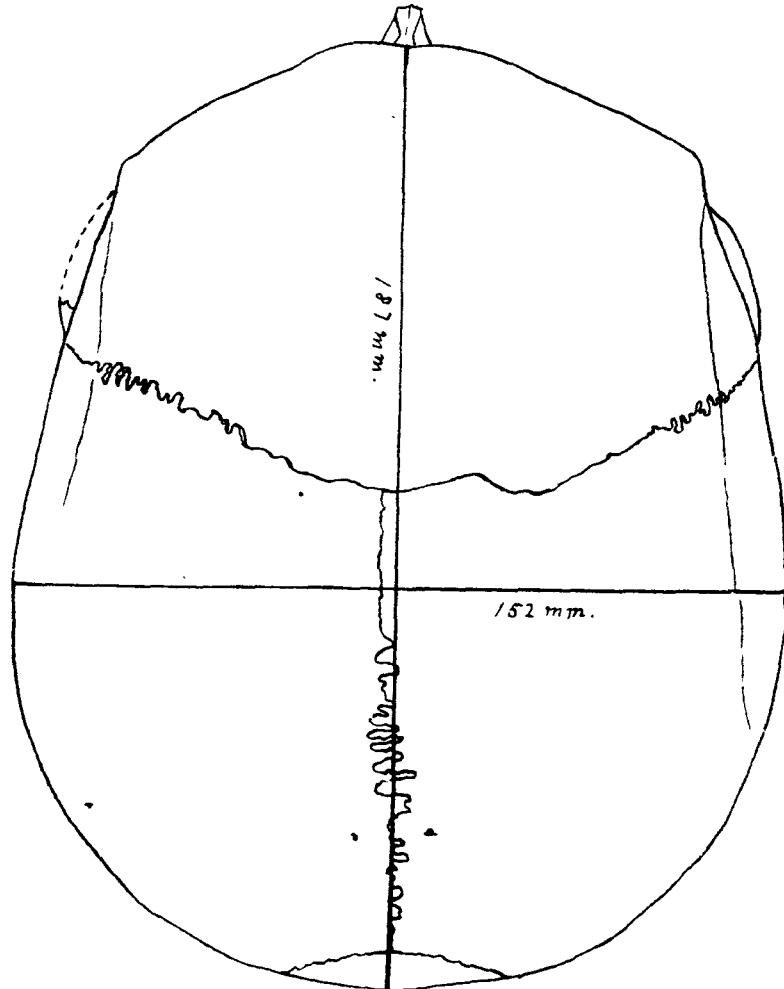


FIG. 6.—KELFIELD SKULL, *norma verticalis*.

large size of the cranial portion of the skull, with a capacity of 1,660 c.c. is, however, in favour of the skull being male.

Norma verticalis (Fig. 6).

Viewed from above the skull is seen to be wide, especially in the frontal region, the cephalic index being 81·3. It is phænozygous, the stephano-zygomatic index being 98·5.

$$\frac{\text{Intersteaphanic diameter } 135 \text{ mm.} \times 100}{\text{Bizygomatic diameter } 137 \text{ mm.}} = 98\cdot5.$$

The contour lies between the ovoid and spheroidal types of Sergi. The sutures, which are open, are fairly simple. The frontal region is large, partly owing to its width and partly owing to the "bregma" being situated far back, near the vertex.

It is worth while noting, on making a comparison of a photograph of the cranial roof with a tracing of the "norma verticalis" (Fig. 6), that the zygomatic arches were not visible in the former, though they are seen in the tracing to project nearly 2 mm. beyond the outline of the cranium. The distance between the lens of the camera and the skull was 30 inches, and it is obvious that in determining whether a skull is cryptozygous or phænozygous one cannot rely on the invisibility of the



FIG. 7.—KELFIELD SKULL, *norma occipitalis*.

zygomatic arches in a photograph of the "norma verticalis" taken from the usual distance, nor on being unable to see the arches when a skull is held out at arm's length and looked at from above. The condition is best determined by measurement and the degree of the projection of the arches relative to the width of the skull expressed by the stephano-zygomatic index, which in the Kelfield skull is 98·5.

Norma occipitalis (Fig. 7).

The skull viewed from behind is pentagonal in form, the sides diverging slightly as they pass up to the parietal eminences, where the skull attains its maximum width. The lambdoid suture, with the exception of a small peak-like projection in the centre, is almost horizontal. The occiput, like the frontal region, is so flattened that the skull can be balanced on this part.

Norma basalis.

The muscular area on the under surface of the occipital bone is of moderate dimensions, and the muscular impressions, although distinct, are not pronounced. The external occipital protuberance is low and ill-defined. The foramen magnum is ovoid in form and relatively small. The pterygoid processes are of small size which, along with the shallowness and small size of the temporal fossæ, indicates that the muscles of mastication were only moderately developed. The palate is also small and the alveolar arch elliptical in form. The palato-maxillary index is 120, the palate thus being *brachyuranic*.

$$\frac{\text{Palato-maxillary width } 60 \text{ mm.} \times 100}{\text{Palato-maxillary length } 50 \text{ mm.}} = 120.$$

Such of the teeth as are present are small and broken. The dental index (Flower) estimated approximately from the alveoli is 32.6.

$$\frac{\text{Dental length } 34 \text{ mm.} \times 100}{\text{Basinasal length } 104 \text{ mm.}} = 32.6.$$

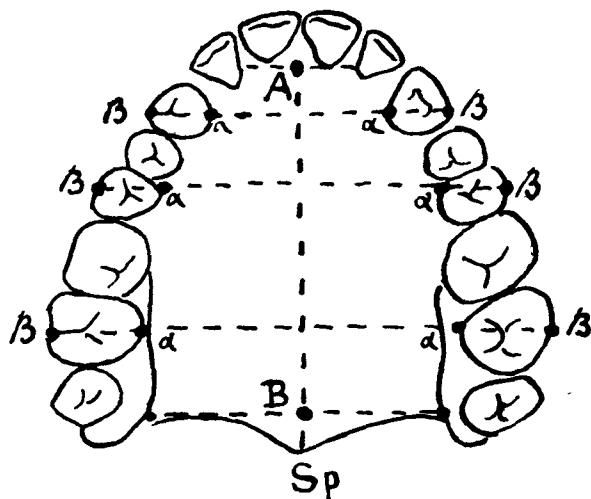


FIG. 8.—OUTLINE DRAWING REPRESENTING THE TYPE OF PALATE AND DENTAL ARCH IN FOUR BRONZE-AGE ♂ SKULLS (PARSONS), SHOWING THE POINTS BETWEEN WHICH THE DIAMETERS IN THE ABOVE TABLE WERE MEASURED.

The skull thus comes within the category *microdont*. On making a comparison of the measurements of the palate and alveolar arch with those recorded by Professor Parsons of four ♂ Bronze-Age skulls, it will be noted that the palate of the Kelfield cranium is considerably smaller in the transverse diameter, although the proportions are very similar. This is in conformity with the small size of the facial part of the skull as a whole, and if it were not for the very large cranial capacity (1,660 c.c.) it might be regarded as indicating that the skull was female.

Table showing a Comparison of the Measurements of the Palate of the Kelfield skull with the average Measurements of four Bronze-Age ♂ skulls (Parsons).

—	Bronze Average.			Kelfield.		
	L.	B.	B.	L.	B.	B.
		aa	ββ		aa	ββ
AB, length of palate without spine	46	—	—	46	—	—
Alveolar breadth at B	—	38	—	—	42	—
A Sp. Length of palate with spine	51	—	—	51	—	—
Transverse diameter opposite canine teeth	—	24	42	—	24	40
" " " second premolars	—	36	54	—	34	50
" " " second molars	—	42	67	—	40	60

Cranial measurements.

Mm.

Glabella to occipital point	187
Ophryon to occipital point	187
Nasion to occipital point	185
Glabella to inion	186
Greatest transverse diameter, biparietal	152
Bistephanic diameter	135
Minimum frontal diameter	107
Width between external angular processes of frontal bone	108
Basibregmatic height	139
Auricular height from centre of meatus to vertex	128
Auricular height from centre of meatus to bregma	128
Longitudinal arc (opisthion to nasion)	377
(a) Opisthion to lambda—arc	108
(b) Lambda to bregma—arc	134
(c) Bregma to nasion—arc	135
Opisthion to lambda—chord	88
Lambda to bregma—chord	120
Bregma to nasion—chord	115
Transverse arc over vertex from upper margins of the acoustic meatuses	332

Measurements of facial part of skull.

	Mm.
Prosthion to nasion	71
Akanthion to nasion	51
Maximum bizygomatic diameter	137
Nasal width (maximum diameter)	24
Basion to prosthion	100
Basion to nasion	104
Maximum intermaxillary diameter between tips of zygomatic processes	104
Interorbital width	25
Minimum interorbital width	22.5
Transverse diameter of orbit	39
Vertical diameter of orbit	35
Posterior nasal spine to prosthion	54
Transverse diameter of palate—	
External	57
Internal	34
Basion to opisthion	40
Transverse diameter of foramen magnum	33

Radial measurements of cranium.

Bi-auricular line to—

Inion	109
Lambda	112
Most distant point on interparietal suture	129
Vertex	128
Bregma	128
Most distant point on frontal bone	129

Indices of skull.

Cranial breadth index (cephalic)	81.3 brachycranial.
,, height index (basibregmatic)	74.3 orthocranial.
,, ,, , (auricular height)	68.4

Superior facial—

Nasion to prosthion (71) $\times 100$	52.7 leptoprosope.
Bizygomatic diameter (135)	98.5 phænozygous.
Stephano-zygomatic	96.1 orthognathous.
Gnathic	89.7 ipsiconchic.
Orbital	47 leptorrhine.
Nasal	120 brachyuranic.
Palato-maxillary	32.6 microdont.
Dental	

Capacity of skull, estimated by millet seed ..	1,660 c.c.
,, ,, Lee's formula [14] ..	1,641 ,
Calvarial height (Fig. 9) ..	105·5 mm.
,, ,, index ..	56·7
Lambda angle ..	80°
Bregma angle ..	55°

Having described the geological and other data bearing upon the discovery of this Kelfield skull, and its general and detailed characters such as high degree of fossilization, coloration with peat, large size and high cranial index, I shall endeavour, by a comparison of it with other skulls found in the Trent Valley and neighbouring counties on the East Coast of England, to show what conclusions may be drawn with regard to its age and racial affinities.

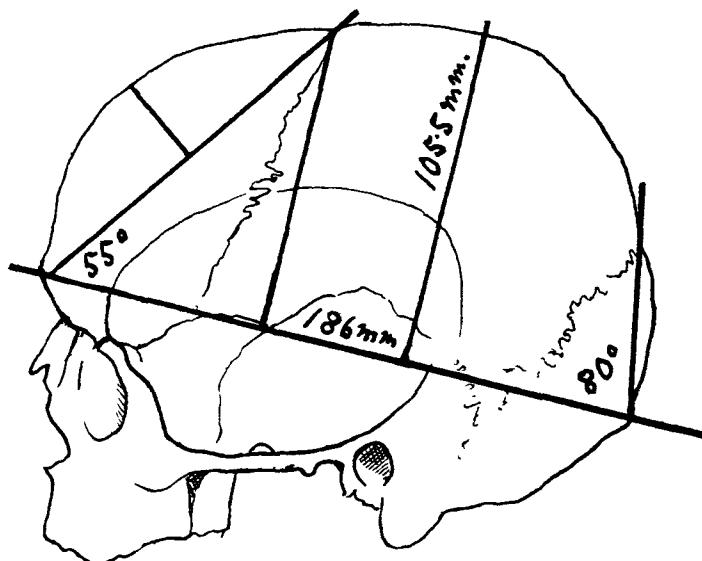


FIG. 9.—KELFIELD SKULL.

Commencing with a review of the more ancient of these discoveries we may consider :—

(1) A skull discovered in the course of a careful geological exploration, by the Rev. E. H. Mullins,¹ of a cave at Langwith in Derbyshire, near the Creswell Crags.—With this skull were found bones of extinct animals of the Pleistocene period and late Palæolithic implements of the Aurignacian type. The skull is of small size, capacity 1,250 c.c., narrow, with flat sides; the supratemporal region of the vault is also flattened on each side of the middle line, the sides rising to a median keel, like the two sides of a roof; the brow ridges are prominent, and there is a well-marked "occipital boss."

¹ Mullins, E. H., Derbyshire Archaeological and Natural History Societies Journal, 1913, p. 1, quoted by Keith, Arthur, *Antiquity of Man*, p. 84.

Keith regards this skull as belonging to the "river-bed," type, as exemplified by the "Trent" skull discovered at Muskham and described by Huxley. It is, however, as pointed out by Keith, of a lower and more primitive type, as is evidenced by a certain degree of post-orbital constriction in the frontal region and by the position of the temporal ridges "100 mm. above the zygomatic arches and only 48 mm. from the middle line along the roof of the skull," which, in addition to the characters already mentioned, distinguish it from the more highly evolved Neolithic type.

A table showing the principal measurements and indices of this and other skulls mentioned subsequently for comparison will be found at the end of the article, on p. 362.

(2) The Sudbury calvaria.—This was found in an alluvial deposit along with bones of *Bos longifrons* (the Celtic shorthorn ox), *Bos primigenius* (the wild urus). This skull was first described by Huxley (15) and Mr. Edwin Brown of Burton-on-Trent (1864-65). Huxley regarded this skull as being of a very primitive type, remarking "that a little flattening and elongation with a rather greater development of the supraciliary ridges would convert this into the nearest likeness to the Neanderthal skull which has yet been discovered." This statement, it should be noted, was made twenty years before the Spy and other skeletons of the Neanderthal type were discovered. A more recent and detailed anatomical description of this Sudbury calvaria has been made by Dr. W. L. H. Duckworth (8), who, although admitting certain "low" characters such as prominence of the supra-orbital ridges, marked recession of the forehead, post-orbital constriction and low calvarial height-index (49.7), regards the skull as having very evident affinities with certain "round-barrow" skulls, e.g., the Rudstone skull described by Rolleston, the Aldro skull described by Mortimer, both of which are of Neolithic date, and also to the Borreby skull found in a Danish tumulus, and the Pobaba skull found associated with bones of the mammoth (*Elephas primigenius*) and hairy rhinoceros, and thus of vastly greater antiquity than any of the other specimens. These comparisons were made chiefly with respect to the cranial contour of the median sagittal plane, and Duckworth regards this type of cranial contour as extending through a wide range of time, and he concludes that although the Sudbury calvaria has certain definitely "low" characters, these are not outside the range of variation of more recent types, and that its greater antiquity is not definitely proven.

(3) The "Muskham" or "Trent" skull found in the ancient bed of the Trent near Newark, in Nottinghamshire.—It was buried naturally in deposits laid down by the river, and is regarded from the objects which were found with it as of Neolithic Age. This skull is of the same general form as the Langwith skull, but the contour is much more rounded, while the flattening of the sides and roof, with the carina or keel, and the prominent supraciliary ridges are absent. It was described by Huxley as the type form of "river-bed" skulls, and as pointed out by Keith (19) is similar

to the Coldrum skulls found in Kent, the skulls found in the Hypogeum at Hal Safieni, Malta, and the ancient Egyptian skulls.

(4) A skeleton found in a limestone cave at Littondale in Yorkshire by Dr. C. A. Hill (15).—The bones were embedded in stalagmite in the floor of the cave, and deeply stained with peat. At the place where the bones were discovered, 240 yards from the entrance of the cave, the roof was 20 to 24 inches in height, and from it “ depended a regular forest of stalactites, many of which had to be broken off to afford a passage. Judging from their length and size, some of these must have taken centuries to form, so it is clear that this part of the cave has lain undisturbed for hundreds of years, and that the bones got into the position in which they were found before the stalactites were formed.”

The skull was brachycephalic, with a cranial index of 82, and a capacity of 1,420 c.c. Only one femur was discovered, viz., the left. It was markedly “ platymeric ” and “ pilastered.” Both tibiae were found, and were “ platy-enemic,” with prominent popliteal ridges. The skull and limb bones indicated the sex as being female. “ A jagged hole was present just above the mastoid process, which might have been caused by some rude weapon, such as a stone axe or spear ” ; and Dr. Hill was of opinion that the woman had died in the position in which the bones were found and had not been buried. Dr. Hill believed the skeleton belonged to an individual of the Bronze Age, and that the period when she lived was somewhere between 1500 and 2000 years ago.

(5) A skull dredged up from the bed of the North Sea, off the coast of Norfolk, described by Dr. W. L. H. Duckworth.—This was a small, narrow skull with a capacity of 1,205 c.c., and a breadth-index of 70. It was of “ cylindroid ” form with a height-index of 69·5, and was regarded by Duckworth as being slightly mineralized, and most probably female. In discussing the site of its discovery he alludes to the large number of bones of prehistoric animals, referable to the period of the “ Cromer Forest Bed,” which have been dredged up from the same locality. These beds lie below a layer of mud and sand containing vegetable débris, which must have been deposited at the estuaries of rivers and in the sea after the Forest Bed had been submerged, and beneath the “ boulder clay,” which is believed to have been laid down in the earliest and most severe of the glacial epochs. A very large proportion of the animal remains which have been dredged up are elephants’ teeth and antlers of deer belonging to the late Pliocene period. Inter-glacial and post-glacial animals are, however, represented among these dredged-up fragments, “ so that it is not to be concluded that the skull, if really ancient, is necessarily pre-glacial, as its association with the Forest Bed would denote ” ; and he remarks further : “ Finally we may be dealing with quite a recent specimen, for even apart from the possibilities connected with modern shipping, it must be remembered that along the Norfolk coast several villages (and consequently their cemeteries) have been submerged within the historic period.”

Despite a considerable number of "lowly" characters, the skull resembles certain modern and mediæval skulls, *e.g.*, a modern Dutch skull (No. 83 of the Moorfield series), and the cylindroid skulls (Nos. 229 and 225) in the Cambridge University Museum ; and Dr. Duckworth concludes that it is impossible to refer the Norfolk skull to a prehistoric age on the grounds of its dimensions and proportions alone.

(6) British peat skulls.—An interesting article, which bears on the present enquiry, was published by Dr. Duckworth in *Man*, in 1911. This is a "Report on Human Crania from Peat Deposits in England." Of the ten skulls which he describes, all except two, which came from Lancashire, were found in the eastern counties, *viz.* : Lincolnshire, Cambridgeshire and Norfolk.

One of the objects of the examination was to ascertain whether there was any homogeneity of type in peat-stained human skulls, such as is found in the peat *fauna*.

Unfortunately there is no history of the discovery of these skulls, and thus the only indications of their age, are their degree of preservation and their physical characters. With regard to homogeneity of type, it may be stated at once that they differ markedly one from another in both form and size. Their length varies from 170–210 mm., their breadth from (?) 133–160 mm., and their cranial capacity from a female skull of 1,133 c.c. to a male skull of 1,860 c.c. The two last-mentioned crania, the small female skull, from Burwell Fen, Cambridgeshire, and the large male skull from Feltwell Fen, Norfolk, differ considerably from modern European types, and Dr. Duckworth states "tend to intrude among the early Palæolithic crania," resembling as regards their calvarial height-index, Bregma angle, and Lambda angle, the Galley Hill and Brünn calvaria. Dr. Duckworth, however, although drawing attention to these resemblances, does not wish to give prominence to the association, more especially, as was pointed out by Professor Stoylawo, there is a considerable overlapping of certain of the cranial characters of Schwalbe's *Homo primigenius* and *Homo sapiens*; and further the alleged antiquity of both these skulls has been regarded with suspicion.¹

Dr. Duckworth further draws attention to the large percentage of peat skulls with a high cranial breadth-index, namely, 33·3 per cent. above 81, whereas "among modern British crania only about 0·33 per cent. have a cephalic index above 81." Dr. Duckworth concludes by stating "that these specimens from the peat are therefore not a fair sample of modern British crania. They differ from them in respect of two specimens (Nos. III and IX) described above, and also in the unusual frequency ("one hundred times the normal amount") of occurrence of distinct brachycephalic proportions.

¹ Moreover, if we take the same three characters only, the bregma angle, lambda angle and calvarial height-index, and compare the Kelfield skull with others as regards these particular angles and index, we find a close association of the Kelfield skull with the Tasmanian aboriginal, whereas in other respects the skulls are obviously widely dissimilar.

Now it is of interest to note that the peat skull found at Kelfield, with a cranial breadth-index of 81·3 and a cranial capacity of 1,660 c.c., agrees with specimens VIII, IX and VI, described by Dr. Duckworth as having a breadth-index above 81, and with specimens I, II, V, VII and IX in having a large cranial capacity.

It must be borne in mind, however, that the sample dealt with is a very small one, and that the mean cranial breadth-index of the nine skulls is 77·4. This figure is certainly considerably above the mean indices for the Whitechapel series of skulls, which are estimated by Macdonell as 74·34 for the male and 74·73 for the female; this series being therefore just within the category of dolichocephaly, and also the Moorfields series, 75·6 ♂ and 75·4 ♀. On the other hand, it is below the average cranial breadth-index 79·9 ♂ and 81·9 ♀ of the 590 Hythe skulls described by Professor Parsons, and considerably below the average of the eight Bronze-Age skulls from the Museum of the Royal College of Surgeons (82), and two Bronze-Age skulls from Broadstairs (79), measured by the same observer.

It is obvious, therefore, that there is a very considerable diversity of type in groups of skulls regarded as British, and as being recent or mediæval in date. This diversity becomes even more marked if we include at one end of the series the dolichocephalic, Neolithic or "river-bed" type, and at the other the brachycephalic Bronze-Age skulls, which two groups may be regarded as important contributory elements in the stock from which the mediæval and recent British types have descended. In some, namely, the eastern and south-eastern counties, it appears that there has been a greater infusion of the broad-headed type, while in others the older long-headed type has persisted to a greater extent. It is not surprising therefore to find a considerable variation in the peat skulls, and when we compare these with the Hythe series, one is not surprised to find a high percentage of skulls showing brachycephaly. Nor is the percentage of brachycephalic skulls above 81, namely, 33·3, so very much greater than that of the modern male "Student" and "Professional Class" met with in London. In my own series of male medical students and staff, measured at the Middlesex Hospital and King's College, London, the average cephalic breadth-index is :—

—	Ceph. Ind.	Stand. Dev.	Co. Var.
457 Medical students	77·925 ± 0·097	3·092 ± 0·069	3·968 ± 0·089
88 Teaching staff	77·619 ± 0·213	2·961 ± 0·151	3·815 ± 0·194

The average *cranial* breadth-index of the peat skulls, 77·4, corresponds, as will be shown later, to a *cephalic* breadth-index of approximately 78·4 in the living subject.

The number of "Medical Students" and "Staff" having cephalic breadth-indices above 80, 81 and 82 were 127, 82 and 53 respectively, with the following percentages:—

				Per cent.
Cephalic breadth-index above 80 =				23·3
"	"	"	81 =	15·0
"	"	"	82 =	9·7

In making a comparison of these figures with the *cranial* breadth-indices of the peat skulls it will be necessary to deduct one from the *cephalic* breadth-indices calculated from measurement taken on the living subject. The last group, namely, 9·7 per cent. of individuals having a cephalic breadth-index above 82, is comparable with the percentage of peat skulls having a cranial breadth-index above 81, namely, 33·3 per cent. Taking into consideration the Kelfield skull with a breadth-index of 81·3, together with Dr. Duckworth's series, it appears that there is a decided preponderance in the percentage number of brachycephalic peat skulls found in the eastern counties of England and Lancashire, as compared with the average of a living male "population" of the Professional Class, measured in London, and drawn from all parts of Great Britain and Ireland. The mean cranial index, 77·4, of the peat skulls, corresponds, however, exactly with that of the "Hospital Population" from which my "post-mortem" series was taken, and is almost identical with that of fifty male patients measured at the St. Pancras Infirmary, London.

The difference of one which I have deducted from the *cephalic* index in order to compare this with the *cranial* index, is considerably less than the amount which is usually deducted, namely, two. I have found in my series of "post-mortem" subjects (12) in which the principal diameters were measured in each subject, first on the head, and then on the skull after the scalp had been reflected, that the average difference in the thickness of the scalp at the sides of the head, and that at the front and back, was almost unappreciable, thus in 50 ♂ subjects:—

	Length.	Breadth.
Diameters of the head	190·4	149·3
Diameters of the skull	182·13	140·83
Difference between the diameters of the head and skull	8·27	8·47
Cephalic breadth-index	= 78·4	
Cranial breadth-index	= 77·3	
Difference between cephalic and cranial breadth-index	1·1	
		<hr/>

In order to facilitate the comparison of the Kelfield skull with others, and of the different types and groups with one another, I have drawn up the following table, in which all the measurements have been reduced to the same standards, *e.g.*, the "auricular-height" of the skull taken from the mid-auricular point in some series, has been reduced to the "auricular height" measured from the upper margin of the external auditory meatus, and the measurements taken on the head of living subjects have been reduced to the measurements which would have been obtained if they had been taken on the skull.

On contrasting the figures in the third and fourth columns of the table, which indicate the length and breadth of the skulls, it will be noticed that the male Palæolithic and the Neolithic skulls have a glabella-maximal length of 192 mm., and a maximum width of 135 and 139 mm., whereas the more recent male skulls found in what are believed to be old "Plague pits" in Clare Market, Whitechapel, and Moorfields, have an average length of 188 mm. and breadth 142 mm., indicating that in the latter there has been a decrease in length associated with an increase in the transverse diameter. In correspondence with the variation in shape the cranial breadth-indices $\frac{B \times 100}{L}$ of the more ancient skulls are 70·3 and 71·3 respectively, as contrasted with an average index of about 75 for the seventeenth-century skulls. In the mediæval Hythe skulls described by Parsons (23) the diminution in length is still more marked, the breadth-index being 79·9 for the male series and as high as 81·9 for the female. The Anglo-Saxon skulls compared with the Palæolithic and Neolithic show an increase in width, but a diminution of only 1 mm. in length, the breadth-index being intermediate between the older and the more recent series, namely, 74·3.

Now, on comparing these with the German, Bavarian and Würtemburg skulls, it will be noticed at once that we have in the Southern German and Bavarians a short, broad type of skull of large size with an average breadth-index of between 82 and 83, and a cranial capacity over 1,500 c.c. The same type is found in Southern Germans and Bavarians living at the present day, as has been shown by Kollmann, Ranke and others, and more recently by Professor Parsons in his report on measurements of the heads of 300 German prisoners of war.

In accordance with the view put forward by Ripley and others, it appears probable that the increased size and width of the skull exemplified in the Anglo-Saxon, Hythe and seventeenth century "Plague pit" skulls, as compared with the small, narrow skulls of the former Palæolithic and Neolithic inhabitants of our island, is due to immigration of the brachycephalic "Slav" or "Alpine" stock through Bavaria, Saxony and Baden to our shores, where they mixed with the original Palæolithic and Neolithic races.

An interesting question which is raised by the study of these groups and series of skulls is : How long has this immigration continued ? and should the advent of

Locality.	Supposed Period or Date. Site of Discovery. Associated Animal Bones, and Implements.	Number.	Sex.*	H, Height of skull. Upper margin of meatus to vertex of bregma.	B, Greatest breadth of skull. Biparietal diameter.	L, Length of skull. Glabella to occipital point.	H, Height of skull. Basion to bregma.	Cranial breadth-index. Length. Basiceregmatae diam. $\times 100$	Cranial height-index. Length. Auricular-height-index. Auricular margin height $\times 100$	Capacity.	Author.	
Langwith, Derbyshire	Pleistocene. Palaeolithic implements of Aurignacian type	1	(♂)	192	mm. 127	70.3	66.1	58.8	1,250	Mullins.		
Sudbury, Derbyshire	Neolithic. Alluvial deposit. Bos primigenius, Bos longifrons	1	—	183	141	—	76	—	1,442	Huxley, Duckworth.		
Muskham, Nottinghamshire	Neolithic. Alluvial deposit. R. Trent. Bos longifrons, Wolf, Dog, Red Deer, Goat	1	(♀)	180	138	(136)	75.5	—	—	Huxley.		
Southern and Eastern Counties	Neolithic. Various long barrows, and Roman barrow, Glos.	20	(♂)	192	139	(134)	71.3	69.7	61.4	1,508† Parsons.		
North Sea. Off coast of Norfolk	Indeterminate. Dredged from bed of North Sea.	1	(♀)	180	126	125	(109)	70	69.5	—	Duckworth.	
Eastern Counties and Lancashire	Indeterminate. Found in peat	... ...	7 (♂)	188.8	144	138	123.4	76.2	69.4	65.3	1,583† Duckworth.	
Littondale, Yorkshire	Bronze. Limestone cave	...	...	1 (♀)	168	138	129	(113)	82	76	—	1,800 Hill.
Southern and Eastern Counties	" "	...	...	8 (♂)	180	148	(137)	121	82.2	76.1	67.2	1,535† Parsons.
Kelfield, Lincolnshire	(?) Bronze. Dredged from gravel beneath peat and sand. R. Trent	1	—	187	152	139	125	81.3	74.3	66.8	1,660 Gladstone.	
Bavaria ...	...	...	...	100 (♂)	180	150	134	121	83.3	74.4	67.2	1,503 Ranke, Lee.
Württemburg, Baden	...	...	...	78 (♂)	181.5	148.6	132.5	115	82.2	72.7	63.8	1,526 Ranke, Lee.

Hythe, Kent	...	Mediaeval. Skulls stored in crypt of church	...	324	(♂)	179	143	133	117	79.9	74.3	65.3	1,452†	
" "	..."	"	"	227	(♀)	171	140	128	81.9	74.8	66	66	1,310†	
" "	..."	Anglo-Saxon	..."	28	(♂)	192	144	(132)	116	75	68.4	60.4	1,561†	
Clare	Market,	..."	Found beneath foundations of Old	30	(♂)	188	142	(129)	113	75.5	68.6	60.1	1,460†	
London	King's Hospital	..."	Believed to have been buried in	135	(♂)	188	141	132	115	74.3	70.2	61.1	1,503	
Whitechapel,	(1665.)	" Plague pit,"				140	(♀)	180.3	134.6	125	109	74.7	69.3	
Moorfields, London	"	"	"	46	(♂)	188	143	130	114	75.6	69.1	60.4	1,299	
" "	"	"	"			63	(♀)	183.3	137.6	124	109	75.5	67.4	1,365
Middlesex Hospital, London	Modern. " Hospital population." Post-mortem records	..."	..."	50	(♂)	182.8	141.5	(135.8)	119.8	77.4	74.2	65.5	1,486†	
St. Pancras Infirmary, London	,"	" Hospital population," Measurements on living subjects	Measurements on living subjects	50	♂	184.3	142.6	(137.8)	121.8	77.3	74.7	66	1,510†	
St. Thomas's Hospital, London	,"	" Hospital population." Measurements on living subjects	Measurements on living subjects	50	♂	185	142	—	76.8	—	—	—	Parsons.	
Middlesex Hospital and King's College, London	,"	Modern Professional Class. Medical students	Medical students	100	♂	189	145	(139)	123	76.7	73.5	65	1,589†	
" "	"	,"	,"	457	♂	187.3	144.1	(138)	122.7	76.9	73.6	65.1	1,561†	
" "	"	Teaching Staff	...	88	♂	189.7	145.4	(139.8)	123.8	76.6	73.6	65.2	1,604†	
						1	2	3	4	5	6	7	10	

Table showing the principal diameters, indices and cranial capacity of ancient, mediæval and more recent skulls found in the Eastern and Southern Counties of England, and in Baden and Bavaria, also the corresponding diameters and indices deduced from measurements of the head taken on living subjects of the "Hospital" and "Professional Classes."

* Those cases in which sex has been judged from the male or female characters of the skull are indicated by the sign ♂ or ♀ placed in brackets.

† Capacity estimated by Lee's formula, ♂ C = .000365 L × B × H + 359.34, or ♀ C = .000375 L × B × H + 296.40.

the Bronze-Age race about 2000 B.C. be regarded as a beginning of the invasion of the "Slav" or "Alpine" stock? or were the Bronze-Age people a different and more powerfully built race who preceded these, and were quite distinct from them? The Kelfield skull and certain of the large brachycephalic peat skulls described by Duckworth seem to furnish evidence which may be of value in arriving at some conclusion with regard to this problem. They appear to occupy a position which is intermediate between the massive, thick-walled "Cowlam" skull, and other similar Bronze-Age skulls, which have been found in round-barrows, and the comparatively thin-walled modern South German and Bavarian skulls. It is possible also that they indicate a change in structure produced not by intermixture of a race having massive, thick-walled skulls with a race having skulls very similar in shape and size but more delicately constructed and having thin walls, such as is found to-day in South Germany and Bavaria, but to a modification produced by a change in habits associated with modern life.

Evidence that changes in stature and in the form of the skull in a definite direction towards a "type form" may take place in the course of a few generations as a result of changed environment has been furnished by Franz Boaz (3), and it appears quite possible that the modern, more refined brachycephalic races of Europe may be directly descended from the thick-skulled, platymeric Bronze-Age race, and that such skulls as the Kelfield cranium, and certain of the peat skulls described by Duckworth, are examples of intermediate stages in this change. It may be mentioned also in this connection that a similar change has apparently occurred in dolichocephalic skulls, as exemplified by the difference in form and structure between the thick-walled, flat-sided and "keeled" Palaeolithic skulls of the "river-bed" type, such as the Langwith and the thinner walled and more rounded Neolithic and modern skulls.

The figures given in the last three lines of the table are of considerable interest in connection with the work of Gustaf Retzius on the so-called North-European Race, published in *Anthropologica Suecica* and summarized in the Huxley Lecture delivered by him at the Royal Anthropological Institute in 1913. In this lecture he brought forward evidence to show that among the modern inhabitants of Northern Europe there is a large proportion who have skulls with a high brachycephalic index, whereas the earlier "mediæval," "bronze" and "Neolithic" inhabitants of the same regions were mostly dolichocephalic, with only a very small number of brachycephali among them. Thus, he states that "dolichocephali were found in preponderating numbers in the graves of earlier times in Germany, especially in the so-called 'Reihengräber': this was particularly the case in districts (e.g., Bavaria, Würtemburg and Baden) where the population of to-day is chiefly brachycephalic." Retzius accounted for this change on the supposition that the brachycephalic races of Central Europe are gradually replacing the original dolichocephalic Nordic or Teutonic types.

The figures in the last three lines of the table have been deduced from measurements taken on living male subjects of the professional class by deducting :—

- 8 mm. from the glabello-maximal diameter,
- 8 mm. from the greatest transverse diameter,
- 15 mm. from the auricular height,

in order to bring them into correspondence with measurements of the skull. The amount to be deducted was ascertained by measurements made under my direction on a series of post-mortem subjects before and after the reflection of the scalp in the same individual. The results obtained from these data were published in *Biometrika*, Vol. IV, 1905. The observations were made on a "Hospital Population," many of whom were aged, and had died from cancer. This may account for a slight thinning of the scalp, and may partly account for the figures being less than those given by Welcker, viz. : a uniform reduction of 11 mm. from each diameter. A part of the difference, however, is obviously due to a slight indentation of the skin by the pressure of the instrument. Allowance has been made for thinning of the scalp, but not for reduction by indentation of the skin, as this would occur in the measurement taken on the living as well as on the dead subject. The amount, 15 mm., deducted from the measurement of the auricular height taken on the living subject, is composed of three items :—

(1) Thickness of scalp on vertex of head	4 mm.
(2) Downward slope of the soft parts of the external auditory meatus below the level of the external opening of the osseous meatus	5 mm.
(3) Difference between the auricular height measured from the bi- auricular line (centre of the meatus) and that from the upper margins of the ear holes	6 mm.
Total	15 mm.

The amount of the second item has been found by Professor Parsons to vary between 3 mm. and 8 mm., giving an average of about 5 mm. The amount of the slope was estimated by dioptrographic tracings of vertical sections made through the bony meatus and the adjoining soft parts of the ear. The figures in brackets in column 5 of the table, indicating the "basibregmatic height" of the skull, have been obtained by deducting 16 mm. from the estimated "auricular height" of the skull, and have been inserted to facilitate comparison with those cases in which the "auricular height" of the skull measured from the upper margin of the meatus has not been recorded.

It will be noticed in the first place, in column 1, that the estimated length of skull of the modern Professional and Student Class, which averages 187·8 mm., is practically

the same, although very slightly less than the 188 mm. of the male Clare Market, Whitechapel, and Moorfields crania (seventeenth-century series). The difference would have been greater if Welcker's estimate of 11 mm. to be deducted from the measurement on the living subject had been adopted, namely, 3·2 mm. The small diminution in length may be accounted for in part by a considerable proportion of the Student Class being between 18 and 20 years of age and the head not having attained its full size(12). On the other hand, taking into consideration that the average stature and size of head in all its diameters is slightly greater in the Professional Class than in the General Population (2, 12), and that one would on this account have expected the diameter to have been greater than in the "Plague-pit" series, it may indicate a slight diminution in the average length of skull in the twentieth century as compared with the seventeenth-century inhabitants of the London area. If these figures are compared with the length of skull of the Anglo-Saxon, 191 mm., and the Neolithic, 192 mm., and Palæolithic skulls, 192 mm., it appears that there has been an appreciable diminution in the average length of skull in England from the Neolithic to the present time, comparable with that which has taken place in Northern Europe (27).

On comparing the estimated breadth of skull of the living subjects with that of the seventeenth-century series, it will be seen that the average width of the living subjects, 144·4 mm., is considerably above the average width, 141·5 mm. of the seventeenth-century skulls; and the change in form is also evidenced by the average cranial breadth-index of the skull which for the modern Student and Professional class is 76·8 as compared with 74·7 of the seventeenth century "Plague-pit" skulls. In comparing these figures with the corresponding measurements of the male Neolithic and Palæolithic skulls (lines 1 and 4) it will be seen that there is a marked difference in width between the modern and the ancient skulls amounting to 5 mm. in the Neolithic skulls and 9 mm. in the "river-bed" type of Palæolithic skull, and that there is a diminution in the cranial breadth-index, which is 71·3 in the Neolithic skulls and 70·3 in the Palæolithic skull. If, therefore, as is generally supposed, the "river-bed" type of Neolithic and Palæolithic skulls is regarded as the form characteristic of the earlier inhabitants of our land before the advent of the round-headed types, a considerable change has taken place in the shape of the head between those periods and the present which is comparable with the changes which have been taking place in Northern Europe, and which is probably due in part at least to amalgamation of the round-headed types with the long-headed; and such groups as the "Hythe" series and the peat skulls described respectively by Parsons (23) and Duckworth (6), which are intermediate in position, indicate that in the people represented by these series the infusion of the new element has been greater than in the General Population represented in the London area by the seventeenth-century "Plague-pit" series, and the London Student and Professional Class.

CONCLUSIONS.

It will be obvious from the preceding description of this Kelfield skull that it differs considerably from the average type of skull found in recent and mediæval burial grounds in England, and from the average living types. It is, however, well within the range of variation of these, and further there are no outstanding peculiarities which would warrant us in assigning it to any particular living or prehistoric race. The circumstances of its discovery, together with its general characters, indicate that it has affinities with the type of skull found chiefly in round-barrows along with bronze implements and pottery of the "beaker" type (1). It is generally believed that the "Bronze-Age" or "Beaker" race of men first made their appearance on our eastern and southern coasts about 2000 b.c. (18), and that these large-headed, brachycephalic invaders mingled with the indigenous small and narrow-headed Neolithic population and with subsequent invaders, including the Romans and those from the adjoining European shores. As a result of inter-marriage of individuals belonging to these races, we find descendants from the original stocks who possess the characters of either one or the other of the ancestral races, in a more or less modified form, or intermediate types. It is possible that the mid-European or Alpine stock of Ripley and the broad-headed inhabitants of the southwest of Norway, described by Arbo, are modern representatives of the Bronze-Age race, which has been modified to a certain extent by intermixture with other races, and by variations in environment, accompanied by changed conditions of life, e.g., the eating of soft cooked food reacting on the development of the jaws, and the muscles acting on them, thus leading to a shortening of the facial region, and diminution in the size of the temporal fossæ and pterygoid processes and diminution in size of the teeth.

Judging from the general characters of the Kelfield skull, it appears probable that it belonged to one of these modified descendants of the early Bronze-Age invaders. How much later than the earliest date at which the first invaders appeared upon our shores it is impossible to determine, as changes in the course of the stream within a river valley, such as have taken place in the course of the River Trent, may occur very rapidly, as also may the deposits in the river bed itself. Moreover "fossilization" or the deposit of mineral salts in bone is said, under favourable circumstances, to take place also with great rapidity, and peat staining in a few months or years. Unfortunately a most important piece of evidence was lost with the disappearance of the animal bones which were dredged up with the skull. It is to be hoped that should further dredging operations take place in the same situation at some future date, this evidence may be forthcoming.

In conclusion the author desires to record his appreciation of the kindness of Mr. T. B. Eminson in lending him the skull, and of the valuable information he has furnished with regard to its discovery, the place-names of the district, and the

geological conditions of the river bed. He also desires to thank his brother, Mr. J. H. Gladstone, for the valuable aid he has rendered in undertaking the statistical work concerned in estimating the "means," "standard deviations," and "coefficients of variation" of the measurements of the students and staff of the Middlesex Hospital and King's College, London. Some of the general results of this work which bear upon the points considered have been utilized in the present paper. The data, however, which have been collected by Mr. Freke Field and the author, with a different object in view, furnish valuable material for another communication, which the latter hopes to publish at a later date. The author further wishes to express his indebtedness to the important papers referred to in the text, by Professor F.G. Parsons, and to thank him for his generous assistance.

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CULTURE AND ENVIRONMENT: CULTURAL DIFFERENCES AMONG
THE VARIOUS BRANCHES OF THE BATETELA.

By E. TORDAY.

THE slow and steady changes a people undergoes in the course of its cultural development are now and then interrupted and driven into new channels by a catastrophal event in its history. Two occurrences are more often than not the cause of such a new course : conquest and migration. It matters little if the people concerned are the conquerors, or the conquered, if they intrude among strange tribes or are intruded upon : the association with another tribe will impress its mark upon their culture. Should migration bring them into a country of a different physical configuration, the change will be all the more rapid and fundamental. The less the difference in culture of the two tribes thus brought into contact is, the more rapidly will an amalgamation ensue. When the difference is very considerable, it often happens that such contact is disastrous to the tribe and to the individual.

It would be difficult to find a people in Africa which would illustrate the effect of such events better than the Batetela. Leaving their ancestral home, some settled down in the grass-land of the Lubefu, others in the forest of the Lukenye. Some came into contact with the relatively cultured Basonge and Isambo, others with the primitive Bankutu ; some were influenced by the Baluba coming from the south, others by the Akela, immigrants from the north. Some were conquered by the Arabs and lived for years under their influence, others became soldiers of the white man and benefited by his education. These two latter groups, being of less interest to the anthropologist than to the colonial administrator, may be dismissed in a few words. What the Batetela auxiliaries of the Arabs were like is described by Captain Hinde, and is of common knowledge. It was they who did all the dirty work for their masters and surpassed them in cruelty and savagery. The Batetela soldiers of the Congo State, when they freed themselves (by murder) of their officers, became the terror of the country and continued so for several years. Allied to the Portuguese slave traders of Angola, they practically depopulated large tracts in the south of the Congo State and practised on the natives such wanton cruelty as is probably unknown in history. It may be said that contact with the white man and the Arab has brought out in the Batetela all the savagery of their prehistoric ancestors. Not so when they came into touch with other tribes of their own race : then they changed too ; many of their ways underwent considerable alteration, but still they continued a

peaceful life and stuck to the moral rules that are common to most Bantu peoples. The existence of the tribe, the influence of the chief, remained, consequently the restraining influence of common responsibility persisted and kept them on the straight path.

The Batetela are a warrior people who extend over a large expanse of territory ; their southern limit is a trifle to the north of 5° S., where they are in touch with the Basonge, part of whose territory they have conquered ; in the north they extend approximately to 3° 30' S. Their eastern boundary runs diagonally from about 23° E. in the north to about 23° 30' E. on the south ; their western limit corresponds approximately with the course of the Lomami. Their neighbours in the north and north-west are the Akela, a people hailing from the upper Congo ; on the west, proceeding southwards, the Bankutu (a forest tribe), the Isambo (a sub-tribe of the Bushongo), and the Basonge (a Baluba tribe originating from the middle course of the Lomami).

The Batetela are divided into various tribes, which in former times were governed by independent chiefs. Many of these chieftainships have disappeared ; some were destroyed by the Arabs, some by the Europeans, while others were absorbed in new chieftainships founded by adventurers like the notorious Lupaka. Starting from the south, and reading from west to east, the chief tribes are the Ihunga, Sungu, Dikonda, Malela ; northwards from the last are the Tusanga, Ohamba, and Samba, living near the Lomami ; west of these and north of the Sungu, are the Saka, Koy, and Mondja, and to the north-west of the last, the Sanga. North of all these, between the headwaters of the Lukenye and the Lomami, are the people of Lupaka, a mixture of many of them, the result of Arab slave-raids, the majority being Ohamba. Farther west, on the south bank of the Lukenye, as far as its tributary the Loachi, are the Olemba, whose manners and customs may be taken as more or less typical of all the Batetela tribes inhabiting the Lukenye banks. North of the Lukenye, to the north and east of Kalufei, is a large and important section of primitive Batetela ; the tribes, reading from west to east along the river bank, are as follows : the Luchimbi, between Kalufei, the Lonya river and the lower Lufeye ; the Lupimbi, from the latter to the Okito river ; the Nambilo, from the last to the Osale river ; and the Yenge, from the Osale river to the Lunya river. Between the Luchimba and Lohale rivers, in a north-easterly direction from the former, are the Piete ; in the triangle formed by the Lohale river and the Loando river are the Vungi ; the last two tribes, on their western borders, march with the Bankutu ; north of the Lupimbi are the Kulumbi ; and east of the last, and north of the Nambilo and Yenge, are the Kudi-Losa. Between the Luchimba, Kulumbi, Kudi-Losa, and Lupimbi is a body of Malela who have been settled there by the Arabs. North-east of the Vungi are the Omona, who are in touch on the north-west with the Alanga, in the north with the Okale and the Lukinde-Jofu, on the north-east with the Shikondo, and in the east with the Utungsala ; north of the last named and extending across the Dompila river are the Djimbo. The last-mentioned row of tribes is in contact

with the Akela to the north, with whom they deny all relationship, and who seem to belong to a different stock, although, so far as culture is concerned, there is no line of sharp demarcation between them.

The Okale, Luchinde-Jofu and Djimbo are called by the other Batetela by the collective name of Bahamba, which seems to indicate that they are regarded rather as the sub-tribes of one tribe than as separate tribes. For the sake of convenience the Bahamba, Omona, Alanga, Shikondo, and Utungsala, who have a great similarity of culture, will be referred to as the northern Batetela. When speaking of the Sungu it must be kept in mind that the Ihunga and Dikonda share most of their manners and customs. The Olemba may be taken as more or less typical of all the Batetela tribes inhabiting the banks of the Lukenyé river.

It seems practically certain that all the Batetela found at present in the Kasai District of the Belgian Congo come from a common home which was on the right bank of the River Lomami ; it is furthermore probable that they came from farther east, and that they are akin to, if not part of, the Bakusu, found in the Manyema ; but there are no traditions confirming the latter assumption, while the former finds ample confirmation in the folk-lore of all the tribes visited. A section of the Batetela is still living on the banks of the Lomami ; unfortunately, it has been to such an extent permeated with Arab and Wanyamwesi customs, that it differs probably more from the original stock than any other section of the tribe. As for the other sections, they must have left their ancestral home in successive waves, one moving south-west, the other north-west. The former migrated into the open plain and came into contact with the Basonge and later with the Arabs, the latter stayed in the forest and became the neighbour of the Bankutu and later of the Akela. It is difficult to say when those migrations took place, and controversial to fix an approximate date ; there can be, however, little doubt that at least a century had passed between the periods of the migrations and the time when I visited the tribes ; probably much more. Meanwhile environment had influenced the two distinct sections considerably, and I propose to deal with the cultural differences observed.

It takes a long time to influence the physical appearance of a people, yet the Batetela of the forest are distinctly of a lighter build than their fellow tribesmen of the plains. They have still preserved their tall stature, but the men of the north are decidedly more sinewy and skinny. Though the unity of the tribe is asserted by all most emphatically, the name Batetela is not in general use. The tribes on the right bank of the Lubefu speak of themselves as Akuchu, those on the left as Sungu, those on the Lomami Udyá, some northern tribes as Bahamba. The word Batetela itself is explained by the Sungu as a nickname given to them by the Arabs, "because we possessed little of what they regarded as the necessities of life," but of course it was taught to the Arabs by the Malela, where they had passed first ; as a matter of fact, researches among the Olemba showed that it was derived from an eponymous god, called Motetela, a word which may mean either "he who laughs not "

or "he at whom one may not laugh." It is certainly remarkable that this name for the deity has disappeared in the vocabulary of the Sungu and neighbouring tribes, and has been replaced by "Winya," the same word as used for the sun, though all idea of sun-worship is emphatically denied by them.

The social organisation of all Batetela tribes is practically identical : a great chief, assisted by elders, governs through a prime minister. But whereas among the Sungu the order of succession is the following : son, brother's son, brother, sister's son, among the Olemba it is the eldest brother who succeeds first, and only when brothers fail does the son come in. In all sections the chief administers justice, and a great part of his revenue is derived from the fines he inflicts. Hospitality is everywhere considered a duty, but whereas a Sungu must shelter any man with whom he has broken bread, there is no such obligation among the northern tribes ; we are consequently justified in assuming that this custom is of Arab importation. Sexual morality is naturally laxer among the tribes which have been more influenced by the foreigner, for while the Sungu punish adultery with a fine, the Olemba used to inflict the capital penalty, and the outraged husband had the privilege of acting as executioner. Among the Sungu a thief is fined ; among the Olemba all his property is confiscated and he is sold as a slave to a foreign tribe. A murderer will be sold by the Sungu to a neighbouring tribe to be killed and eaten, but his relatives can redeem him ; the Olemba force the guilty man to hang himself publicly. The ordeal used to discover the guilt or the innocence of the accused is, among the Sungu, borrowed from the Arabs and consists in compelling the accused to pick a needle from a pot of boiling water ; the northern tribes resort to the old-fashioned ordeal by poison. Among the Sungu a man who makes himself a nuisance to the village or proves a coward is beaten, and may be sold as a slave ; the northern tribes do away with him by the administration of poison.

As among all Bantu peoples, all through the Batetela country land is vested in the chief for the benefit of the tribe. The right of women to hold property varies considerably in different sections : the farther north we go, the fewer rights do they possess. Thus among the Sungu they may own slaves and practically everything except weapons ; among the Olemba they cannot own slaves, and among the northern tribes no property can be held by women. If the father or both parents are slaves they transmit their status to their progeny among the Sungu ; among the Olemba if either parent is free the children are so, though in the northern tribes all children born in the village are free ; but whereas among the other tribes there are no restrictions as to marriage between the free and the slaves, the northern tribes do not permit the marriage of a male slave with a free woman. The fact that among the northern tribes all the slaves are foreigners explains their stricter regulations, for among the Sungu and the Olemba many Batetela tribesmen are in a state of slavery. These latter allow their slaves to redeem themselves, for slaves may own property everywhere, but the former do not permit such redemption. The northern Batetela will

eat their slaves, but as no one for whom the slave has worked may partake of the meal, it is usual to buy a slave specially for cannibalistic purposes and to kill him at once before he has worked for his new master.

The law of inheritance differs considerably among the various tribes of Batetela. Among the Sungu, the eldest son of a man, by any of his wives, is heir to his property ; in default of sons the following inherit in the order named : brother's son, brother, sister's son, the friends who bewail the deceased. Among the Olemba the property is equally divided among his brothers, or failing brothers, among his sons. Among the northern Batetela inheritance goes in the following order : eldest son, eldest brother, eldest brother's eldest son. With regard to the property of women, among the Sungu it passes to the father or eldest brother of the deceased, but the individual who inherits must supply the widower with a new wife, often the sister of the deceased. Among the Olemba the property of a married woman goes to her husband. Here we see the three distinctive phases of ownership clearly represented in the same tribe : the Sungu woman may own practically anything, and at her death her property returns to her own family ; the Olemba woman may own certain things, but at her death they revert to her husband ; and, finally, the northern Batetela woman cannot own at all. The widows themselves are treated on similar lines : among the Sungu they follow the property of their deceased husband, but can free themselves entirely by restoring the bride price ; among the Olemba they can choose a husband among the brothers of the deceased ; while the northern Batetela allow them no say whatever in the matter.

The Batetela, as has been mentioned by various travellers, especially by Captain Hinde, are experts in conveying news by means of gongs : they are excelled by no other tribesmen in the art of beating the gong ; as a matter of fact a "gong concert," so long as it is heard from some distance, is decidedly pleasing, even to the ear of the European. It is to be observed, however, that the instruments used by the various sections of the tribe to transmit signals differ entirely. The Sungu gong is of the well-known flat pattern, beautifully finished, and six different notes can be produced on it ; the mallets have their ends covered with rubber. The Okale gong is cylindrical and is roughly made of a tree trunk hollowed out ; the mallets are not covered with rubber. The Sungu gong hangs round the drummer's neck when beaten ; that of the Okale lies on the ground.

As to marriage customs, there are some differences to be noted among the various tribes. Marriage among blood relations is prohibited among all Batetela, but while a Sungu may marry his father's widow, an Olemba cannot do so. The Olemba alone are exogamous. Among the Sungu, who have been so long under Arab influence, marriage resembles very much a simple business transaction, but the consent of the bride cannot be dispensed with. Among the Olemba the bridegroom elopes with the girl, the mother conniving. The father then has to dun his son-in-law for a considerable time for the bride-price, which he extorts only in small instalments.

The son-in-law appoints a friend to deal with him, and this friend is remunerated according to his success in whittling the price down. Infant betrothal is found among the various sections of the tribe, but the habit of engaging a new-born female child to a small boy by throwing an iron bracelet into the water in which the baby has been first washed is only practised by Sungu mothers. Polygyny is general, but while among the Batetela who have been under Arab influence it is practised as a sign of rank and wealth (important chiefs have harems of hundreds of wives), the more primitive Batetela contents himself with a few spouses, even important chiefs being satisfied with a dozen or so. Prostitution is common among the Sungu, and meets with no disapproval; the northern Batetela tolerate it though they regret it, while the Olemba frankly condemn it. It is supposed that if a Sungu woman is unfaithful to her husband during pregnancy her child will die; this belief does not exist among the Olemba. In all tribes the husband has to abstain from intercourse with his wife during the period of pregnancy, but among the Sungu he can liberate himself from restriction by having intercourse on the day on which the child was born. The northern Batetela surround the hut of a woman who has just given birth to a child with a lofty fence of leaves, and she is kept secluded for some time.

Though the Malela are the tribe among the Batetela which has been most influenced and transformed by the Arabs, yet we find among them alone certain signs of moon worship which are undoubtedly a primitive form of their religion. When the moon appears, the whole village shouts a welcome, gongs and drums are beaten, guns are fired, and all work ceases till the close of the next day; on a journey a rest is made, and a war party, as far as possible, will avoid an engagement on this day. Washing is only performed in forest brooks, everyone puts on his best clothes and walks about with a green branch in his hand; it is considered a good day for magical operations and the most powerful medicines are made under its influence. The chief will stand on a pedestal composed of stakes, and the crowd of villagers will surround him, holding palm leaves stripped of the fronds nearly up to the tip. At a word from the chief the whole assembly will run round him, raising and lowering their bodies and holding their palm leaves high up in the air. The ceremony ends by a sham fight in which the participants throw their palm leaves at each other.

No trace of all this can be found among the Sungu; they have changed the name of the old tribal god and have adopted that of Winya, which means the sun. But though there is undoubtedly much confusion between the two, yet, so far as it is possible to get behind the minds of the natives, who are not accustomed to analyse their ideas, it seems that they consider divinity as quite distinct from the physical sun. Winya, the god, makes light and appoints the day when a man will have to die. He has created the world and it is he who makes living things reproduce their kind. The moon is regarded as the younger brother of the sun, that is to say his inferior; it is not credited with any special powers.

Mr. Joyce has suggested that it is not unreasonable to conjecture that when the Sungu emerged from the ancestral forest, the original home of the Batetela, into the plains full of beneficent sunlight, a confusion arose in their minds between their supreme god and the luminary which was to play a much more important part in their lives than before. Thus the old tribal god Matetela was replaced by Winya, the sun god.

As might be expected, there is little difference in magic among the various tribes ; masks are the inevitable part of the paraphernalia of the witch or wizard, and are used to inspire the common crowd with awe. Of course, every section has adopted something from its new neighbours ; thus the Tongo-tongo, which makes men invulnerable to the white man's bullets, is found among the Batetela, who are in contact with the Bankutu, and anthropomorphic fetishes have made their appearance among the Sungu, borrowed from the Baluba neighbours. The following practice was observed only among the Malela. At the entrance of their village there is a long line drawn in the sand, made by the strangers when entering it ; when, on their departure, they cross this line, each man scratches a transverse line across it with his foot or stick. It appears that before the arrival of the foreigners in the country epidemic diseases were unknown ; when the first Malela invaders arrived the inhabitants were attacked by a malady which appears, from the accounts given, to have exhibited the symptoms similar to those of cerebro-spinal meningitis. The mortality was heavy, but those individuals who survived for eleven days after the first attack were always cured. Then the white man came and the epidemic disappeared, to be replaced, however, by sleeping sickness. It is believed that there exist still among the Malela some wizards who have the power of letting loose the former epidemic, and those foreigners who do not put their mark on the line contract the disease and die.

There are very considerable differences in the treatment of the dead. The Sungu wash the corpse carefully, adorn it with clothes, and ornament its head with parrot feathers. After lying in state for three or four days it is buried in a sitting position, the legs straight, the forearms resting along the thighs with the fists clenched, in what the natives describe as a " nice place," though occasionally, at the wish of the deceased, in his hut. The grave is marked with a small mound, on which is erected a miniature hut, where food must be deposited daily by a relative, who, should he neglect this duty, will be haunted by the dead man in his dreams. If he does not mend his ways his wife and cattle will become sterile and his crops will fail. The deceased is bewailed by the whole village for a day, by near relatives for two, and by his nearest family for three. Widows and widowers must abstain from any particular food of which they may have partaken in the company of the deceased during the last days of his or her life. For example, if a husband and wife have eaten millet together and one died, the survivor would be obliged to confine himself to manioc as his staple food. This tabu is broken by the brother of the deceased, who gives a present to the mourner. At present widows paint the face

and body with white clay, but in former times they simply abstained from washing.

A dead Olemba is suspended by a rope in a shed and smoked for three or four months ; at the end of this period the body is cut down by the mother or the sister and buried resting on the elbows and knees, with the head turned towards the west. No mound is raised on the grave, and goats, fowls, etc., are sacrificed on it. All huts belonging to the deceased or his wives are burnt. The Olemba men smear their abdomens with soot as a sign of mourning, the women their cheeks.

Among the northern Batetela the dead are not smoked, but are simply buried in a reclining position in or near the village, and a hut is erected over the grave. These grave huts are rectangular with ridged roofs, and the height of their walls is about eight inches, that of the roof about fifteen ; the walls are of trellis work with open squares of about three inches. The doorway of the house in which the deceased lived is closed with strings and the building is allowed to fall into ruins.

The Sungu, when meeting or parting, now shake hands, but in former times they pressed their lips together, as the northern Batetela do to this day ; the Olemba press noses.

The diet of the various Batetela has been greatly affected by their surroundings : the Olemba both use millet and manioc, but while the Sungu make the former their staple food, and only use the latter when millet is unobtainable, the Olemba consider millet rather a luxury and use mostly manioc, which grows better in the forest country. The northern Batetela have adopted the plantain as their main source for producing the flour for their bread, thus indulging in the typical diet of the forest dwellers. The Okale alone seem to ignore the art of preserving meat by smoking, consequently they will eat it in an almost putrid state so as to waste none. Crows are tabu among the Sungu and only wizards among them will eat hawks. Among the northern Batetela any man past the age of begetting children is allowed to eat these birds. The Sungu believe that a man who eats otters will become repugnant to women. Certain antelopes are tabu to Sungu chiefs, and indulgence in their meat will provoke a skin disease from which ordinary mortals are immune. The northern Batetela chiefs are debarred from eating the flesh of the leopard, because he is a chief himself. None of the northern Batetela may eat the ground-hornbill, *kubaka*, nor the dog, because the latter is a member of the family. Among all the sections women have to abstain from human flesh ; besides, there are the common restrictions of various animals. The Sungu alone manufacture oil from the ground-nut ; geophagy, practised by the Sungu and Olemba occasionally, is unknown among the northern Batetela. Cooking, always the task of women, is done by all Batetela in pots, except by the Vungi, who have adopted the Bankutu method of leaf cauldrons. They fill a pot with water and place it on the fire, and in the mouth of the pot is placed a large bundle of manioc-meal wrapped in leaves and supported by sticks which prevent it from

coming into actual contact with the water ; the steam from the pot cooks the meal. The Sungu cook in the hut, the other tribes on the verandah. Customs relative to meals vary. Among the Sungu, the food is first served to the husband and his friends, the children eat next and the wife last. Since the arrival of the Arabs the hands are usually washed before eating. Among the Olemba meals taken in the daytime are eaten outside the hut, the evening repast inside ; the women eat with the men and the host helps himself first. Among the northern Batetela the men eat first, and should they finish all the provisions which have been prepared, the woman will cook again for herself, but will offer a first taste of the new supply to her husband as a matter of form.

If one believes their own statements, the Batetela were ignorant of the art of producing fire before they came to their new home. The Sungu maintain that they have learned it from the Basongo Meno ; the Olemba to this day import their fire-sticks from the Bahamba. Both tribes aver that in former times perpetual fires were kept in all the villages. The northern Batetela employ the stick-and-groove method, which is that of some inhabitants on the banks of the Lomami, the Tophoke. As it is simply impossible to believe that as late as one or two centuries ago this tribe ignored the art of producing fire, we can only conclude that in their original home all the Batetela did use this, for Africa, exceptional method, and have only adopted the common one when they came into contact with their present neighbours. A confusion of ideas, the identification of an art with a new method, leads them now to believe in the humiliating error that they are indebted to their despised neighbours for this knowledge.

Hemp smoking has been introduced by the Arabs and is combated by the Belgians : we consequently find that among the Sungu, who first adopted it and spread it among the other Batetela, it has nearly disappeared, while the forest tribes, whither the white man's influence has only lately penetrated, still practise it on a considerable scale.

Hunting is naturally much affected by the nature of the country where it is practised. The Sungu live in grassy plains and each village has its hunting grounds strictly defined, though game, once wounded, may be pursued beyond their own territory. The game is driven by dogs towards the hunters, and firing of the bush is also resorted to. The northern Batetela construct hedges in the forest and drive the game into traps ; others pursue their prey single-handed, by preference an animal accompanied by its young. Springs constructed by means of a bent tree are also used for large animals.

Among the Sungu all work connected with agriculture is performed by women ; this is not so among the forest-dwelling northern Batetela, where the superior strength and skill of the men is necessary to remove the trees. It is difficult to explain how it is that a primitive form of hoe, with a wooden blade, was freely found among the Sungu, while it was not even known among the more primitive

northern Batetela. It is as curious as the fact that the Sungu have only recently introduced spears with iron blades (the common pattern is a straight branch sharpened at one end), while the Olemba and northern Batetela have had them in common use as far as they can remember. Another remarkable phenomenon is that though the Batetela come from a country where the native drink is " pombe " beer, and live now among people who freely indulge in palm wine, produced both from the elais and the raphia, yet they use no other beverage but water, and are ignorant of intoxicants. Clubs, now only worn just for the sake of carrying something, are only found among the northern Batetela.

Painting the body for the purpose of ornament is not practised by the Sungu, but further north it was once a universal custom to adorn the body with red cam-wood dust. This habit has now completely disappeared among the Olemba, though it is still preserved among the northern Batetela. The Sungu men do not cicatrize themselves; among the Olemba the fashion is on the wane, but the northern Batetela men still practise this method of adornment. The Olemba preserve occasionally, however, the tribal mark, which consists of a series of very broad scars on the shoulder. Among the Sungu women the cicatrization is very elaborate, and extends, roughly speaking, from the neck to the knee. The design is composed of a large number of scars of two varieties; of these the most obvious stand out in relief, the rest form slight depressions in the skin, and in certain lights are practically invisible. This fact, in connection with the elaborate nature of the designs, rendered the work of recording the tattoo patterns exceedingly laborious, but the late Mr. Hardy, who accompanied the expedition to the Batetela country, succeeded in copying not only the general patterns, but in reproducing faithfully the exact number of scars which composed them. The Batetela seem to have borrowed to some extent the designs of their cicatrization from the Baluba, and the idea of executing them in dots from the Tophoke, though, as stated above, instead of raising scars they produce depressions. This method, as far as is known, is only practised by them, though the curvilinear lines the Bena Lulua score on their faces (see *Man*, 1913, 2) are to some extent of the same character.

The cicatrization of women of the northern tribes is less elaborate. The method of tattooing with a vegetable decoction which first causes inflammation, then turns white and finally dead black, is of Arab introduction.

Tooth deformation is practised among all the Batetela tribes: the Sungu and Olemba extract the two middle incisors in the upper jaw, and the operation is performed upon boys and girls at the age of puberty. The northern Batetela do not extract any teeth, but file all incisors in both jaws in a peculiar way.

Though now replaced by all sorts of fancy patterns, the traditional hairdress of the Sungu consisted of a big bunch on the forepart of the head, twisted into tresses and ornamented with charms; women wore it in a kind of diadem.

The women now shave their heads completely. Olemba men shave the base of their skull on the back, but allow the hair to grow freely on the crown and forehead; the northern Batetela arrange it in the shape of a halo. The Sungu, probably under Arab influence, often let beard and moustaches grow; the Olemba and northern Batetela shave off the latter. All Batetela remove the body hair, women by plucking, men by shaving; the Olemba, moreover, shave the eyebrows and pull out the eyelashes. Sungu and Olemba of both sexes pierce their earlobes, the Sungu women the septum, the Olemba women one nostril; the northern Batetela not only do not practise either of these piercings, but consider them as shameful, as a sign that the owner was or had been a "*fumbe na Assambala*," a slave of the Arabs. This proves practically that the custom was of Arab introduction; as a matter of fact the holes made by men in the helix are said to have been made to provide receptacles for gun-caps.

No head or foot coverings are found among the Olemba and northern Batetela, but the Sungu possess both. Tradition among the latter avers that it was the custom for all Batetela to fasten the skin of a mongoose to their hair by means of a pin, so that the tail hung down the back, but this custom has become obsolete for a long time. A piece of cloth passed round the head in imitation of a turban, a straw hat in imitation of the white man's headgear, such are the modern substitutes. The Sungu wear in muddy weather sandals of a distinctly Arab pattern, they claim these as indigenous, but the fact that the other tribes never use them confirms their foreign origin.

As for dress, few native customs have been preserved by the Malela; anybody who can afford it wears the Arab Tamba-tamba and an imitation turban: those who cannot do so, dress according to their fancy. The Sungu scarcely ever use the native-made cloth, but dress in Manchester cotton-stuff. According to the wearer's wealth, two to ten yards of it are passed round the hips and tied. But one tribal characteristic has been preserved—over the dress, hanging over the buttocks, the skin of a cat or of a small civet is worn; this skin is ornamented with little bells, teeth, charms, etc. I have seen Batetela in complete European outfit wear this skin over their garments, and soldiers of this tribe, when going to war, always did so if their officer had intelligence enough to allow them. Farther north, European cloth becomes rarer, and it completely disappears among the northern Batetela. The Olemba wear loin cloth of palm fibre. The Omona pass a strip of palm fibre cloth about two feet long by seven inches wide between their legs and support it before and behind by the girdle; the Vungi dress exclusively in antelope or similar skins. The Alanga ornament their cloth with inwoven patterns, an art acquired probably from the Akela.

The houses of the Sungu are of what is accepted to be the East African type: the circular base is constructed of wooden posts, covered with grass, and the thatched roof is conical. This type is, however, now gradually replaced by mud

buildings of European pattern. The Olemba huts are similar, but the inner part of the walls is covered with strips of bark. This use of bark is characteristic of the forest dwellers. Among the Vungi this becomes more extensive ; the huts consist of a framework of posts, inside which are fastened strips of bark, usually horizontally, sometimes vertically. The houses themselves are of the West African rectangular pattern with a ridged roof, which is extended at one end to form a verandah in which the food is cooked. The huts of the Okale are similar in type, but they are built in series, with a common verandah, *i.e.* two huts are built with a single continuous roof, but with a space between their respective walls. The walls in some cases resemble those of the Vungi huts ; in other cases they consist of palm leaves fastened to a diagonal lattice of palm-leaf ribs, or of palm-leaf ribs alone arranged vertically and in close contact. The roofs are made of leaves held down by poles at right angles to, and at either side of, the ridge ; the threshold is level with the ground and the doorway is furnished with a door suspended by a cord. The leaf roof is, of course, typical of forest dwellers. As may be expected, a similar kind of house is found among the northern Batetela. Their villages, like those of the Okale, are built in the forest, and an artificial clearing is made for them ; the Vungi and the southern tribes prefer natural glens for theirs.

The Batetela are not river people, and navigation, as far as it is indigenous, is in a very primitive stage. The Olemba construct rafts composed of three logs lashed together with creepers ; the centre log is slighter and shorter than those on either side of it. A fourth log placed transversely across the other three serves as a seat for the paddler. The paddle usually consists of a rectangular slab of bark, fixed by lashing into the split end of a stick. The Sungu use canoes purchased from their more advanced neighbours.

There is no essential difference in the leather and basket work of the various tribes, though the Sungu and Malela have improved the latter by learning from their neighbours. The same may be stated of weaving, but here the northern Batetela show a decided advance on their fellow tribesmen. They produce cloth with inwoven patterns in black ; their method is unusual and merits a description at length. The warp is composed of undyed fibre and the pattern is marked out beforehand by means of thin lease-rods, which are inserted in the warp to serve as guides to the shuttle when the black fibres forming the pattern are inserted. The pattern is produced by floating the weft, but no trace of it is seen on the reverse side of the fabric for the reason explained below. In this type of weaving, where the weft is not continuous, it is impossible to manufacture a fabric of very close texture, and the production of a design by floating the weft over three or four elements of warp at intervals would tend to weaken the fabric. This difficulty is met by inserting, with each black weft-element, an undyed element. This undyed element does not follow the same path as the black element, *i.e.* is not floated at the same time, but combines with the warp elements to form a regular and unbroken plain chequer

stitch. The result is precisely the same as if a plain piece of cloth had first been woven, composed entirely of undyed fibre, and the black weft had been inserted later by means of a needle. Two different patterns are always found on each man's dress, a smaller in front and a larger behind. The fringes are made up over a piece of palm-leaf rib, in a manner similar to that in which bag-pipe fringes are prepared, so that the depth is uniform. The black dye is obtained from swamp earth.

All the Batetela practise metallurgy : iron and copper are used, but only the former metal is produced at home. The method of smelting differs in the various tribes. The Sungu find the ore, which they call *Otendo*, in the ground, at a depth of 8 to 10 feet, the smithy is an open shed, and here the ore is mixed with charcoal, heated for several days, and beaten continually. Several shifts of men engage in the work, so that it may not be interrupted, and several pairs of bellows are used. This industry is rapidly disappearing, owing to the cheapness of European goods. The smelting furnace of the Olemba, who call iron ore *Boko*, is circular, and the ore is put at the bottom. Over it is spread a layer of wood, and over this a layer of charcoal. Bellows are employed, and the furnace is heated for one day and then allowed to cool for two. Finally the metal is cut up into the *Ikunga* currency. The northern Batetela smithy is more elaborate. It consists of a shed about 20 feet long, shaped like half a boat turned upside down and open at either end, the broader entrance being about 8 feet wide. At this end the floor is sunk about 2 feet 6 inches for the distance of half the length of the shed. The actual furnace consists of a circular shaft sunk at the fore end of that portion of the floor which is left untouched, and forms, as it were, a platform extending half the length of the hut. The bottom of the furnace is on a level with the sunk portion of the floor, and a hole is made at the base of the "platform" which communicates with the shaft. Into this hole the nozzle of the bellows is built with clay and the furnace is half filled with charcoal and the ore placed on the top. This method of smelting may have been acquired from the Akela, who obtain their metal in a similar way. All the Batetela use bellows of the West African "pot-pattern."

The Sungu construct suspension bridges of twined creepers over rivers. A kind of cable, about 9 inches in diameter, is fastened by means of creeper lashings to a tree on each bank ; this is the footway. A hand-rope of smaller diameter is slung above it on either side, and is connected with it by means of a network of creeper, which would seem to render a fall impossible. As none of the other Batetela make similar bridges, it is probable that the Sungu have acquired this art from foreigners.

The bows of the Batetela are of the East African pattern, circular in section and tapering towards either end. They have, however, narrow servings of palm fibre to prevent the slipping of the cane bow-string. Among the Olemba and the northern Batetela this serving is surmounted by a knob of palm fibre woven "Turk's-head" fashion. This and the cane string belong to West African culture. In a Bahamba toy-bow the ends were furnished with a series of notches ; the loop at the end of

the string was caught in one of these, and the string then passed over a notch cut in the end of the bow. Arrows exhibit considerable variety. The simplest consists of a plain slip of palm-rib with splinter-barbs at the point, and a feather inserted in a split at the other end ; many are not nocked. This type is practically the only one found among the Sungu, and in some cases they are not feathered. The same type is found among the Olemba and the Batetela of the Lukenye, and among the former are usually not feathered. A second type consists of a palm-rib shaft, with a tanged wooden point splinter-barbed. The shaft is feathered with a leaf inserted in a split, and the nock is bound to prevent splitting ; the nocks are usually deep. This type is found among the Olemba (often without feathers), the Bahamba and Vungi, as well as the Batetela of the Lukenye. Among the Vungi the points are sometimes double and triple. Socketed iron heads with irregular lozenge-shaped blades are found among the Olemba and northern Batetela. Among the Olemba the shafts are furnished with four feathers attached spirally ; the shafts are of wood, and the blades are either ogee or flat-lozenge in section. Among the Omona and Vungi three feathers arranged vertically are found ; the nocks are deep and well-bound, and the blades are usually ogee. Among the Bahamba both patterns are found, and also a third in which two feathers are bound tangentially to the shaft. Socketed iron heads furnished with a pair of bilateral barbs occur among the Olemba, Alanga, Bahamba, and Vungi. Among the Bahamba one specimen with a barbed shank was collected. The original Batetela spear was made of a piece of wood, sharpened at the end, but all the tribes have now adopted spears with iron blades, which resemble those used by their nearest neighbours. The Batetela shields, made of palm-ribs, used to be rectangular and V-shaped. Among the Sungu they have become obsolete, and in the north they have given place to arc-shaped ones.

Finally it must be mentioned that syphilis was unknown among the Batetela till introduced by the Arabs, and that sleeping-sickness reached the country within recent times only, from the west.

The collected facts thus show that the various branches of the Batetela have altered in their new environment to such an extent that they now have very little in common among themselves. They have borrowed from the west and from the north, from the dwellers of the grass-land and the inhabitants of the forest. We find the northern branches with a culture characteristic of the forest, the southern with such a one as is typical of the inhabitants of grassy plains. Yet, by deducting that which is obviously borrowed, and summarizing that which all, or at any rate the majority, have in common, we may conclude what the Batetela were like in their ancestral home.

They came from the east, originally much farther east than the shores of the Lomami, a tribe of sturdy warriors. They had a tribal god as well as moon worship, and a common chief. The inheritance was from brother to brother ; brothers failing, the son succeeded. The chief was assisted by elders, and governed through a " vizier." The laws were stern : offenders were sold to another village, and there they were

killed and eaten. In case of doubt the poison ordeal was employed to establish guilt or innocence. Land was vested in the chief for the benefit of the tribe. Women could not possess. The slaves they owned were all foreigners, and could not redeem themselves. Their currency consisted in shells and iron blades. The Batetela were exogamous as far as villages were concerned. Infant betrothal was not unknown. Polygyny on a moderate scale was common, prostitution condemned. It is more difficult to decide what their original mode of burial was : the dead were probably buried in a reclining position. Their staple food was millet ; the only fat used was palm-oil. Intoxicating drinks were unknown. Fire was produced at first by the twirling method, though when settled on the Lomami the stick-and-groove method was adopted from the Tophoke. The use of tobacco was known. Men and women shared in the labours of agriculture, and wooden hoes were in use. Wooden spears and clubs, iron knives and axes, with bows and wooden-headed arrows, were the arms of offence ; V-shaped rectangular shields, made of palm-leaf ribs and strengthened with wood, were used for defence. Both men and women scarred their bodies. The men arranged their hair in the shape of a halo, the women in that of a diadem. Neither ears nor noses were pierced. The men wore a small animal skin in front and behind, and another on their head. Women wore a fringe of grass. The houses were round, with a conical roof and made of grass. The art of navigation and of building bridges was not familiar to the Batetela. They wove cloth of raphia fibre, and made baskets of various materials. They knew how to smelt iron and how to work it.

In writing this paper I have freely used the manuscript of an unpublished book, written in collaboration with Mr. T. A. Joyce, to whom I have great pleasure in acknowledging my indebtedness.

ON AN EARLY CHELLIAN-PALÆOLITHIC WORKSHOP-SITE IN THE
PLIOCENE "FOREST BED" OF CROMER, NORFOLK.¹

[WITH PLATE XVII.]

By J. REID MOIR.

THE discovery to which this paper relates was made towards the end of September of this year (1920).

For the past eighteen months I have spent a considerable amount of time investigating the deposits forming the cliffs of the north-east coast of Norfolk, and have already published a paper dealing with certain humanly-fashioned flints found at, and in the neighbourhood of Mundesley.²

During this year I have devoted my attention to the district of Cromer, and have now to record the discovery of a flint workshop-site of Early Chelian-palæolithic age, which, in my opinion, is referable to the lowermost division of the Pliocene, "Forest Bed" series.

In the researches which I have carried out, I wish to acknowledge the help afforded me by my friends, Professor A. S. Barnes, Mr. Guy Maynard, Mr. J. E. Sainty, and Mr. A. C. Savin. I have also to express my great indebtedness to Mr. E. T. Lingwood for providing me with the excellent drawings with which this paper is illustrated. But, while recording my indebtedness, I would wish to make it quite clear that the above-mentioned gentlemen are in no way responsible for any of the views and statements expressed in this communication. For these I am alone accountable.

THE CROMER "FOREST-BED."

Before proceeding to deal with the humanly-fashioned flints which have been recovered, it is necessary to give some account of the remarkable deposits, known as the Cromer Forest Bed Series, with which these specimens are associated. As is well known, the Cromer Forest Bed of the Norfolk coast is regarded generally as of Newer Pliocene age, and was laid down after the deposition of the marine Weybourn Crag, and before the formation of the Arctic Freshwater Bed which ushers in the great Pleistocene glaciations.

The first published notice of the Cromer Forest Bed appeared in 1746 (*Arderon, W., Phil. Trans.*, vol. xliv, pt. 1, No. 481, p. 275), and, since that date, a large number of distinguished geologists, and others, have continued to examine and report upon these interesting and, in many ways, unique deposits. But the most complete and

¹ The expense of illustrating this paper has been borne in part by the author.

² *Proc. Prehis. Soc. E. Anglia*, vol. iii, part ii, pp. 219-243.

instructive account of the Cromer Forest Bed is that written by the late Mr. Clement Reid, and contained in one of the *Memoirs of the Geological Survey*, "The Pliocene Deposits of Britain." It is to this account, supplemented by my own observations upon the coast, that I owe what knowledge I possess of the Cromer Forest Bed, and, having seen many of the sites and sections described by Mr. Reid, I realize clearly the immense amount of hard and detailed work which the above-mentioned memoir represents.

In the following remarks, the numbers of various pages given refer to those in the *Survey Memoir*, "The Pliocene Deposits of Britain." On p. 149 Mr. Reid states : "Where most complete the 'Forest-Bed' consists of three divisions—an Upper and a Lower Freshwater Bed, and an intermediate Estuarine deposit. The Lower Freshwater Bed is seldom preserved, though its flora is well known from the quantity of *Pholas*-bored cakes of peat and clay ironstone found in the Estuarine Beds, and derived from the breaking up of the underlying deposit. The middle division, which is more particularly the 'Forest-Bed' of Norfolk geologists, least deserves the name ; for wherever it can be studied it is distinctly estuarine. . . . It is from this division that most of the large mammalian remains have been obtained. The upper surface of the Estuarine Beds is in many places weathered into a soil and penetrated by small roots (hence the name 'Rootlet Bed'), and here and there it is covered by, or eroded hollows in it are filled with, lacustrine deposits. These form the Upper Freshwater Bed, in which most of the small bones and freshwater shells are found."

It is generally supposed that these varying deposits which constitute the Cromer Forest Bed Series were laid down by, or connected with, a large river flowing from the south-east across an area now occupied by the North Sea, and that this river was in all probability a northern extension of the present Rhine (pp. 188, 189).

The mammalian remains found in the Cromer Forest Bed are very widely known, and need not be dealt with in detail here.

In many places along the coast the upper portion of the Cromer Forest Bed series can be seen in section towards the base of the cliff ; but the lower and most ancient part, being covered by beach material, can seldom be observed in the cliff, except when a succession of north-westerly gales has caused the sea to scour away the sand and shingle.

It is now, however, possible, at low water, to examine the basal portion of the Cromer Forest Bed deposits, when the receding tide has laid bare certain areas which, only a comparatively short time ago, were covered by great masses of glacial and other strata in the then existing cliff.

A DESCRIPTION OF THE SITE WHERE THE HUMANLY-FASHIONED FLINTS WERE FOUND.

The site at Cromer where the humanly-fashioned flints described in this paper were found, covers an area of foreshore about 150 yards long by 100 yards wide. It

is exposed at low water, beyond the seaward extension of the beach, and occurs almost opposite the termination of the sea-wall to the west of the town. The site is covered by a great number of flints of varying sizes (Pl. XVII, Fig. 1) which, for the most part, appear, by their coloration and condition, to be referable to the well-known Stone-Bed occurring beneath the Crag deposits of Norfolk. Associated with these Stone-Bed flints are (*a*) examples of paramoudras, (*b*) a few quartzite pebbles, (*c*) very numerous examples of clay-ironstone pebbles, and rolled pieces of chalk (the flint-bed at several points rests upon this rock, which, in places, exhibits *pholas* borings in its surface), and (*d*) small pieces of mineralized bone,¹ belemnites, and other chalk fossils. .

Lastly, there are to be found scattered about amongst these relics numerous examples of humanly-struck flint flakes, and implements which exhibit generally, upon their flaked surfaces, a brilliant and arresting yellow-ochreous coloration.

It is to be remarked also that many of the large blocks of Stone-Bed flint show upon their surfaces flake-scars which are of the same ochreous shade, and the conclusion is drawn that these large flint masses represent the cores from which the ancient Cromerians obtained the raw material in the manufacture of their artefacts. It appears, further, that, in some cases, suitable flints from the Stone-Bed were used by these people as hammer-stones (a fact discovered by Mr. G. Maynard), as several examples have been found on the Cromer site, exhibiting localized battering upon some portion of their surfaces.

These Stone-Bed flints differ markedly in their appearance from the ochreous specimens, being generally of a dark brown or purple shade, which is quite characteristic.

The occurrence in such a limited area of a large number of humanly-fashioned flints (130 were collected during two exposures of the flint bed at low water), comprising cores, [?] hammer-stones, flakes, and implements, makes it clear that an actual flint workshop-site is here represented, and an explanation of this phenomenon at such a place must be sought. In the first place it cannot be regarded as possible that the various items, greatly differing in size, which go to make up the industry which has been discovered, have drifted down the coast from some other site. The sorting action of the tides would prevent the assembling at one and the same spot of flints of such varying size and weight. Moreover, few of the specimens found at Cromer exhibit signs of extensive rolling by water-action, and many of them are almost unabraded. (The only ochreous specimen, other than those found upon the beach at Cromer, which shows the peculiar effects of prolonged rolling by water, resulting in the smoothing down of all outstanding portions of the flint, is the Chelian-platessiform implement, picked up on the shore at Palling, some miles south-

¹ Mr. Savin informed me that a large molar tooth of *E. meridionalis* has been recovered from this site. The *Survey Memoir* of the district (p. 28) also states that, when the sea-wall was built, a number of tree-stumps were said to have been found.

east of Cromer, and given to Mr. Savin. This flint, which Mr. Savin has very kindly allowed me to figure and describe (Figs. 7A, 7B, and 7C) exhibits a coloration indistinguishable from many of the Cromer artefacts, and was, in great probability, derived from the workshop-site under description, or from some similar exposure along the adjacent coast.)¹ It is clear also that the massive blocks of flint which have served as cores, are, to all intents and purposes, sedentary, and have remained where they are now found ever since the period when the Norfolk Stone-Bed was laid down.

The next point to consider is, whether there is any possibility of the flint artefacts found upon the foreshore at Cromer having been derived from some Early Palæolithic gravel existing formerly in the cliff which at one time covered the flint bed under examination. From what can be gathered as to the rate of recession of the cliff at this spot (the base of the cliff is now about 86 yards from the shoreward extension of the flint-bed), it is presumed that about one hundred years have elapsed since the workshop-site was covered by the cliff.² We have, so far as my knowledge goes, no records of what strata were exposed then, but in 1882, when the Geological Survey published Mr. Clement Reid's "Section of the Norfolk Cliffs from Happisburgh . . . to Weybourn" (Vertical and Horizontal Scale, Eighteen Inches to One Mile), the cliff, a little distance north-westward of the site of the workshop, showed Contorted Drift overlying Pliocene deposits. It is impossible to say with certainty of what beds the cliff is composed a few yards to the south-east of the section mapped by Mr. Reid, and exactly opposite the workshop-site on the foreshore, because, in 1882, the sea-wall was in existence and the cliff above it had been sloped off and turfed over. But the section at, approximately, the same spot as is shown in the Geological Survey map exhibits now (September, 1920) Contorted Drift over Pliocene beds, so that though, no doubt, the cliff has been somewhat cut back by the sea since 1882, a similar series of deposits is exposed. The cliff, just beyond the north-westward termination of the sea-wall, is about 80 to 100 feet in height.

It will thus be recognized that, so far as can be ascertained, it does not seem probable that an Early Palæolithic gravel-bed ever capped the cliff at this spot. Moreover, as has already been mentioned, the large flints which served as cores in the manufacture of the ochreous implements certainly belong to the Sub-Crag Stone-Bed, and have remained practically unmoved since their original deposition.

There remains the question as to whether the flints collected have been flaked by man, by natural pressure, or by wave-action.

¹ Palling lies to the south-east of Cromer, and I have found isolated examples of the ochreous flakes, showing considerable abrasion, upon the beach below Cromer. It is well known that the beach material travels along this stretch of coast from the north-west to the south-east, and the occurrence of these flakes upon the beach indicates that the tides are gradually removing the smaller specimens from the workshop-site.

² In the *Geol. Survey Memoir*, "The Geology of the Country around Cromer," it is stated in the Director's "Notice" that the cliffs are being worn back at the rate of about two or three yards in a year, but this would appear to be an excessive estimate for the site under consideration.

It would not seem that this question need be extensively explored, as the Cromer site has yielded implements of definite Early Chelian-Palæolithic forms (exhibiting a very ancient ochreous coloration), together with other implements and flakes, and to deny the human origin of these would be to revert to the days when the implements of similar form discovered by M. Boucher de Perthes were regarded as having been flaked by some non-human natural agency, and it is not supposed that any present-day archæologists would wish to deny the human origin of the Chelian implements.

But it may be pointed out that, though some of these Cromer flints must have been exposed to the action of the sea for a considerable number of years, the flaking produced, apparently, upon them by such action is of almost negligible extent.

THE GEOLOGICAL AGE OF THE WORKSHOP-SITE.

Having demonstrated that the humanly-fashioned flints found upon the workshop-site at Cromer cannot well have been derived from another spot, but must be referred to some bed underlying the cliffs, it is possible to proceed to enquire to which bed they really belong.

In the first place, it is not possible to associate a flint workshop-site with such a glacial deposit as the Contorted Drift—nor does it seem feasible to suppose that the humanly-fashioned flints belong to the Sub-Crag Stone-Bed. Further, small patches of Weybourn Crag occur between some of the larger flint masses upon the foreshore (there is a patch of undisturbed Weybourn Crag about three feet in thickness, to be seen resting upon the chalk a few yards south-east of the workshop-site), and the ochreous specimens do not occur *in situ* under these deposits of Crag. Judging from these facts it would seem probable that, at one time, the top of the Crag was a land surface upon which lived the people who fashioned the ochreous artefacts. It would seem also that, when this land surface existed, the Weybourn Crag had been extensively eroded so that the underlying Stone-Bed was exposed, as most of the ochreous specimens are made from Stone-Bed flint.

In connection with this matter it is of interest to note that in *The Pliocene Deposits of Britain* (p. 140) Mr. Clement Reid states : “There seems never to be more than a few feet of Crag beneath the Forest-Bed, and in some places the Forest-Bed rests immediately upon the chalk.” Again (p. 149) he states : “It is not improbable that there may also be another land surface beneath the Lower Freshwater Bed, for in one place the Weybourn Crag below the Forest-Bed has a rather weathered appearance ; but of this one cannot be certain.” Further (p. 151), it is stated that : “Since the year 1882, when the Geological Survey *Memoir* on the Cromer Forest-Bed was published, a good deal has been learned about the Forest-Bed, especially with regard to its relations to the underlying strata. The making of trial-borings in 1886 and 1888 showed that the eroded surface beneath the deposit was one of the most marked features, and that there was always a more or less gravelly base to the Forest-Bed, beneath which the Crag was cut into by numerous channels or hollows

(the italics are mine). Several of the borings were stopped by this gravelly base of the Forest-Bed, and could not be carried into the Crag."

Finally, on p. 159, it is stated : "About three-quarters of a mile north-west of Cromer there is sometimes exposed at low water two or three feet of black mud, representing the Lower Freshwater Bed ; this mud can be traced for about a hundred yards, cutting through the Weybourn Crag, and in one place for a few feet touching the chalk, so that it extends to extreme low-water mark."

These quotations make it clear that (a) the Weybourn Crag is hardly ever of great thickness beneath the Forest-Bed ; (b) that it is not improbable that a land surface existed beneath the Lower Freshwater Bed, and upon the surface of the underlying Weybourn Crag ; (c) that the trial borings carried out showed that there

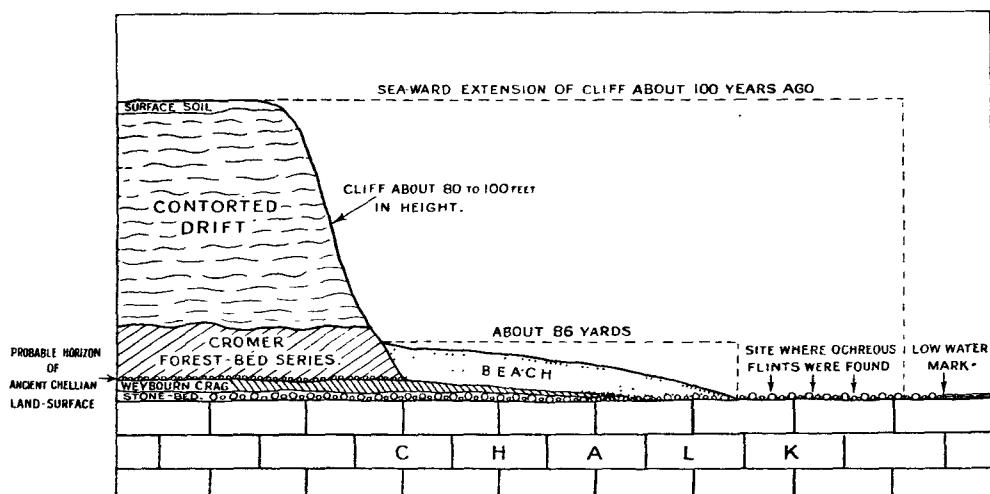


FIG. 1.—DIAGRAMMATIC CROSS-SECTION OF CLIFF, BEACH, AND FORESHORE AT CROMER, SHOWING PROBABLE RELATIONSHIP OF IMPLEMENTIFEROUS HORIZON TO THE CLIFF DEPOSITS (NOT DRAWN TO SCALE).

was always a more or less gravelly base to the Forest-Bed ; and (d) that, three-quarters of a mile north-westward of the workshop-site under discussion, the lowermost division of the Cromer Forest-Bed Series was seen by Mr. Reid, cutting through the Weybourn Crag and extending, in one place, to extreme low-water mark.

The discovery to which this paper relates appears to afford strong support to Mr. Reid's opinions, and I have little doubt in stating that the workshop-site upon the foreshore represents, in part, the lowermost stratum (the "gravelly base" mentioned by Mr. Reid) of the Cromer Forest-Bed Series. Further, it is my opinion that the ochreous flints, which, so far as my knowledge extends, do not occur in the Estuarine or Freshwater divisions of the Cromer Forest-Bed Series, were flaked by a race of people living upon the eroded surface of the Weybourn Crag.¹ If reference is

¹ One of the specimens has attached to a portion of its edge a mass of ferruginous material precisely similar in appearance to the "pan" present at the base of the Crag at Cromer, West Runton, and Sheringham.

now made to Pl. XVII, Fig. 2, and Text-fig. 1, which represent a view of the Stone-Bed as seen from the top of the cliff, and a diagrammatic cross-section of the cliff, beach, and foreshore, a few yards north-westward of the spot where the workshop-site occurs, the probable relationship of this site to the beds forming the cliff will be made manifest.¹

On p. 185 of *The Pliocene Deposits of Great Britain* Mr. Clement Reid states : " Both the fauna and flora (of the Forest-Bed), leaving out the large mammals and other extinct forms, are curiously similar to those of the ' Broad District ' of Norfolk at the present day ; and this, like the rest of the evidence, points to a wide alluvial plain with lakes and sluggish streams, bounded on the west by a slightly higher sandy country covered with fir-forests and distant from any hills." Upon this wide, well-watered plain, supporting an abundant mammalian fauna, it now seems evident that man existed and fashioned his implements from the quantities of first-class flint which there lay ready to his hand.

A DESCRIPTION OF THE FLINT IMPLEMENTS DISCOVERED.

Though, perhaps, earlier observers have not been so fortunate as to make such an extensive discovery of humanly-fashioned flints in the Cromer Forest-Bed as has fallen to my lot, it is necessary, nevertheless, to record the fact that it is now many years since the first intimation of such flints being found in this deposit was published. Sir Charles Lyell, in the first edition of his well-known work *The Antiquity of Man*, shows clearly that he regarded it as probable that, eventually, traces of early man would be discovered in this deposit, as, on p. 212, he states : " Neither need we despair of one day meeting with the signs of man's existence in the Cromer Forest-Bed . . . on the ground of any uncongeniality of the climate, or incongruity in the state of the animate creation with the wellbeing of our species." The first discovery of flaked flints, claimed as being of human origin, in the Cromer Forest-Bed, was made by Mr. W. J. Lewis Abbott, who published his original paper in *Natural Science* in 1897 (X. 89). Mr. Abbott has also recently published a further account of his discovery, and a description of four flaked flints recovered (*Proc. P.S.E.A.*, vol. iii, part 1, pp. 110-113). In 1911, Dr. W. L. H. Duckworth published an account of the Cromer Forest-Bed (*Cam. Antq. Soc. Communications*, vol. xv) and described a flaked flint found by him in "the Forest-Bed on the foreshore at Overstrand," of which specimen he states that "one margin bears marks precisely comparable to the finer working on an undoubted chert flake, or scraper (of the type of Le Moustier) obtained by me in a cave at Gibraltar." Finally, I described in *Man* (vol. xvii, No. ii, November, 1917) a piece of humanly-shaped wood, found by Mr. S. A. Notcutt who, in 1916, dug it out of the Cromer Forest-Bed, where this deposit was exposed at the base of the cliff south-east of Mundesley.

¹ I have proved that the flint bed extends for some little distance under the beach.

It is also of interest to note that, in 1884, Sir John Evans (see *Ancient Stone Implements of Great Britain*, second edition, p. 572), while walking along the foreshore at low water at West Runton with Mr. Savin, picked up an ochreous flint flake, which he presented to the latter gentleman with the remark that it was, apparently, of palæolithic age.

An examination of this specimen makes it at once clear that it is of the same kind, both in technique and colour, as those found upon the workshop-site at Cromer.¹

Owing to the kindness of Mr. Savin I am enabled to illustrate this specimen (Figs. 19A and 19B) and to describe its characteristics.

Mr. A. S. Kennard, who has for many years past made a close study of the Pliocene and Pleistocene deposits of Britain, has published recently (*Proc. P.S.E.A.*, vol. ii, part ii, pp. 249–67) a paper in which—basing his views upon palæontological evidence—he concludes that “there is no inherent improbability” in supposing that *humanly-flaked* flints occur in the Cromer Forest-Bed, and that if his conclusions are correct “Man is not only Pliocene, but at this period he was in what has been called the Palæolithic stage.” And, in a letter which Mr. Kennard has sent recently to me, he states that the types of Early Palæolithic implements he has postulated as being of the same age as the Cromer Forest-Bed, are those found upon the plateau to the south of the Thames Valley, and generally known as the “Hill Group.”

When an examination is made of a typical series of the *humanly-fashioned* flints upon the foreshore at Cromer it is seen that the majority of the flake-scars² of the specimens exhibit a very rich yellow-ochreous coloration. The thickness of this “skin” of colour is quite appreciable and, so far as our knowledge goes, stamps the flints which show it as of a great antiquity. A certain number of these ochreous flints, however, exhibit flake-scars which definitely cut into, and are therefore later in date than, the ochreous staining, and these later flake-scars are coloured a peculiar yellowish-blue. And I have found, associated with the older series of artefacts, a smaller group, of which *all* the flake-scars exhibit this yellowish-blue coloration.

Finally, a certain proportion of the ochreous specimens possess flake-scars produced, apparently, by wave action operating within the last one hundred years, and these flake-scars exhibit the unchanged black colour of the original flint.

Thus, judging from this evidence, it would seem that a race of people living upon the ancient Pliocene land surface found an exposure of Stone-Bed flints, which they proceeded to utilise for implement making. The artefacts so produced were exposed probably for a considerable time to atmospheric conditions, and acquired a white coloration, such as is exhibited by many flints lying upon the surface of the

¹ Mr. J. E. Sainty has now [April, 1921] found isolated examples of flint flakes, of the same order, though not so deeply stained as the Cromer specimens, on the foreshore at Sheringham and at East and West Runton.

² In many cases the flints exhibit remains of very ancient flake-scars, which, by their coloration, are referred to pre-Weybourn Crag times.

ground to-day. A later race of people, it would seem, occupying the same area of the ancient land surface, found the discarded artefacts of their predecessors and proceeded to flake them to their own particular needs. It is probable that these later-made implements were exposed to atmospheric conditions long enough to acquire a bluish coloration, and were then covered up beneath the oldest Cromer Forest-Bed deposit. The long sojourn of the flints in this stratum has, apparently, had the effect of giving rise to the well-marked staining which they now exhibit. The older series of artefacts having a white and therefore absorbent surface,¹ offered little resistance to the staining agent, and became deeply ochreous. The later series, bearing a bluish, and therefore harder surface, were not nearly so susceptible to the stain and exhibit merely a yellowish coloration, beneath which the original blue is discernible. When the flints, owing to the cutting back of the cliffs, were once more exposed, the action of the waves has, apparently, removed some few flakes from their edges, and the flake-scars arising from them have, as has been stated, suffered no colour change.

The differing hardness of the ochreous and yellowish-blue coloured flints is further shown when an examination is made of the amount of abrasion which the two series exhibit. It appears that this abrasion has been caused by the treatment the specimens have received by knocking about amongst the larger Stone-Bed flints, since they were exposed owing to the recession of the cliff, and gradual breaking up of the "human" stratum in modern times. The deeply ochreous flints have suffered most by this treatment. Their ridges and projecting parts have, in many cases, "broken down" as it were, exposing a somewhat wide path of soft cortex-like material.² The impact of stones set in motion by the action of the sea has also given rise to numerous small pits and abrasions upon their surfaces. In the case of the yellowish-blue specimens, however, the ridges and projecting parts are almost intact, while the impact of other stones, to which they have been subjected, has only had the effect of producing incipient cones of percussion upon their surfaces. Thus, while the differing coloration and condition of the two series of artefacts might seem to point to different treatment in the past, I am of opinion that the treatment has been the same, but the effect of this treatment has differed owing to the differing hardness of the two classes of flint surfaces. None of the specimens found upon the foreshore at Cromer exhibits the same amount or kind of abrasion, such as is to be seen upon the platessiform implement found upon the beach at Palling (Figs. 7A, B, C). This flint shows the effect of typical beach action which smoothes away all ridges and projecting portions, gradually producing

¹ For further evidence upon this question see *Science Progress*, No. 44, April, 1917, pp. 597-603.

² This phenomenon was first drawn attention to by Sir Ray Lankester in his description of the rostro-carinate implement named by him "The Norwich Test Specimen" (*Roy. Anthr. Inst. "Occasional Papers,"* No. 4, 1914).

a condition known as "pebbling." The Cromer specimens, taken as a whole, are, as would be expected, when the geological horizon to which they are referable is remembered, remarkably free from striations, but one or two of them exhibit a few small and ill-defined scratches.

A certain portion of the flints have, embedded in the surfaces of their flake-scars, certain rod-like fossiliferous inclusions (possibly sponge spicules), while small patches, bearing a high polish, are sometimes discernible upon the flake-scars. But the specimens do not exhibit, generally, a well-marked polish, such as is met with upon many flint implements. Several of the artefacts have shells of the modern barnacle, and other marine organisms, attached to their surfaces.

The Stone-Bed flint from which the implements under description were made is peculiar in that, immediately under the layer of cortex, is often to be seen a line, of varying width, which has remained unaffected by the agents which have brought about a colour change in the other portion of the flake-scar. This peculiarity has been noticed in many of the flints found beneath the Red Crag of Suffolk, and is, in all probability, due to the differing hardness (or to some other quality) of the silicious material forming the nodule. In some of the Cromer flints this difference is not confined only to the region immediately beneath the cortex, but appears, occasionally, upon other parts of the specimens, and gives rise to a marked divergence of colour upon one and the same flake-scar.

I have now in my collection 249 of the ochreous flints from the workshop-site at Cromer, and as an *atelier* of Early Chellian age is not frequently met with, it may be of interest to describe the manner in which the work of flaking was carried on. As has already been stated, it appears that these Early Chellian people, during their sojourn in the wide alluvial plain upon which the Cromer Forest-Bed series of deposits was laid down, came upon an expanse of Stone-Bed flint which had become exposed owing to the erosion of the Weybourn Crag. These Sub-Crag flints are of a fine quality, and even till to-day can be flaked with precision. It would seem that the ancient Cromerians of Early Chellian times proceeded to remove flakes from some of the large Stone-Bed flints by means of quartzite pebbles and other stones, which they used as hammers. Very frequently a more or less flat striking-platform was prepared upon which they delivered their flake-removing blows, but sometimes a flattish area of cortex was utilized as a striking-plane. The flakes so removed were made into *râcloirs*, or side-scrapers, round scrapers, "hollow" scrapers, choppers, and points.

It is evident also that it was the custom to produce what are known as flake-implements, exhibiting, on one side, a number of incomplete, or truncated, flake-scars, and, on the other side, a plain fracture-surface with bulb of percussion.

These flake-implements, which indicate that the block of flint from which they were struck had been previously "prepared" for their detachment, were often used as *râcloirs*. As is usual upon a workshop-site, flakes predominate, but in the making

of any type of implement, large numbers of flakes must necessarily be produced, and their quantity at Cromer is therefore quite in order. Various examples of implements of the well-known platessiform and batiform type have been found in different stages of completion. These were fashioned, generally, from nodules of suitable size, and it is apparent that certain of them were discarded because of cavities and other flaws in the flint which were exposed in the flaking process.

In one of my published papers (*Phil. Trans.*, Series B, vol. 209, pp. 329-350, 1920) I drew attention to the probable relationship of the rostro-carinate implements to the later tongue-shaped implements of Chelian times, and showed how, in all probability, the latter was evolved from the former. And it is of interest to find that flaked flints (exhibiting the normal ochreous coloration) of rostro-carinate form occur on the Cromer workshop-site. These specimens are regarded as being in process of manufacture into the platessiform, and batiform, Chelian implements, and seem to afford strong support to the view expressed in the paper quoted. The vast majority of the Cromer artefacts are of massive size (this is especially the case with regard to the chopping implements), and must have been flaked by people capable of delivering accurate blows of very great force. But a certain number of the flakes and implements are small, and were, apparently, fashioned by hammer-stones of less size than those used in the flaking of the larger specimens. The bulbs of percussion to be seen upon the flakes are all very similar to each other, and to those of Chelian flakes found in other parts of the country, and indicate that the blows responsible for their formation were delivered in a similar manner, and, taken as a whole, the Cromer specimens exhibit a homogeneity which, so far as my experience extends, is barely met with in prehistoric flint cultures.

IMPLEMENT OF ROSTRO-CARINATE FORM.

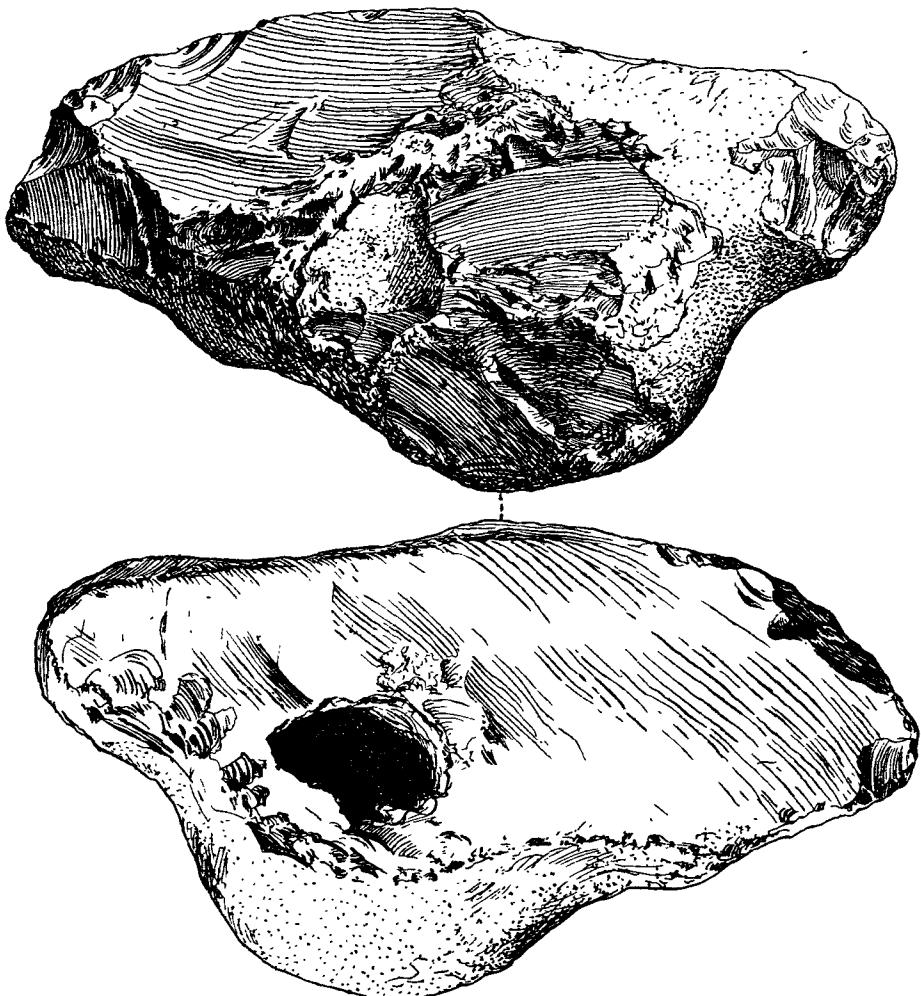
All the artefacts selected for illustration and description are typical of the group they represent.

The specimen illustrated in Figs. 2A and 2B was found by me, and exhibits a well-marked beak-like profile, and the other usual and well-known characteristics of the rostro-carinate implements.¹ It has been fashioned from a nodule of flint and the right lateral surface (Fig. 2B) is marred by a large and deep cavity, which was probably the cause of the rejection, and state of incompleteness, of the implement. The ventral surface of the specimen exhibits a number of flake-scars, but is otherwise composed of cortex. The keel, or carina, of the dorsal surface is, however, clearly defined, and would, it seems, have formed one cutting edge of a platessiform, Chelian implement had the fabrication of the specimen been completed.

¹ Lankester, Sir Ray, *Phil. Trans.*, B, vol. 202, pp. 294-295.

IMPLEMENT OF PLATESSIFORM CHELLIAN FORM.

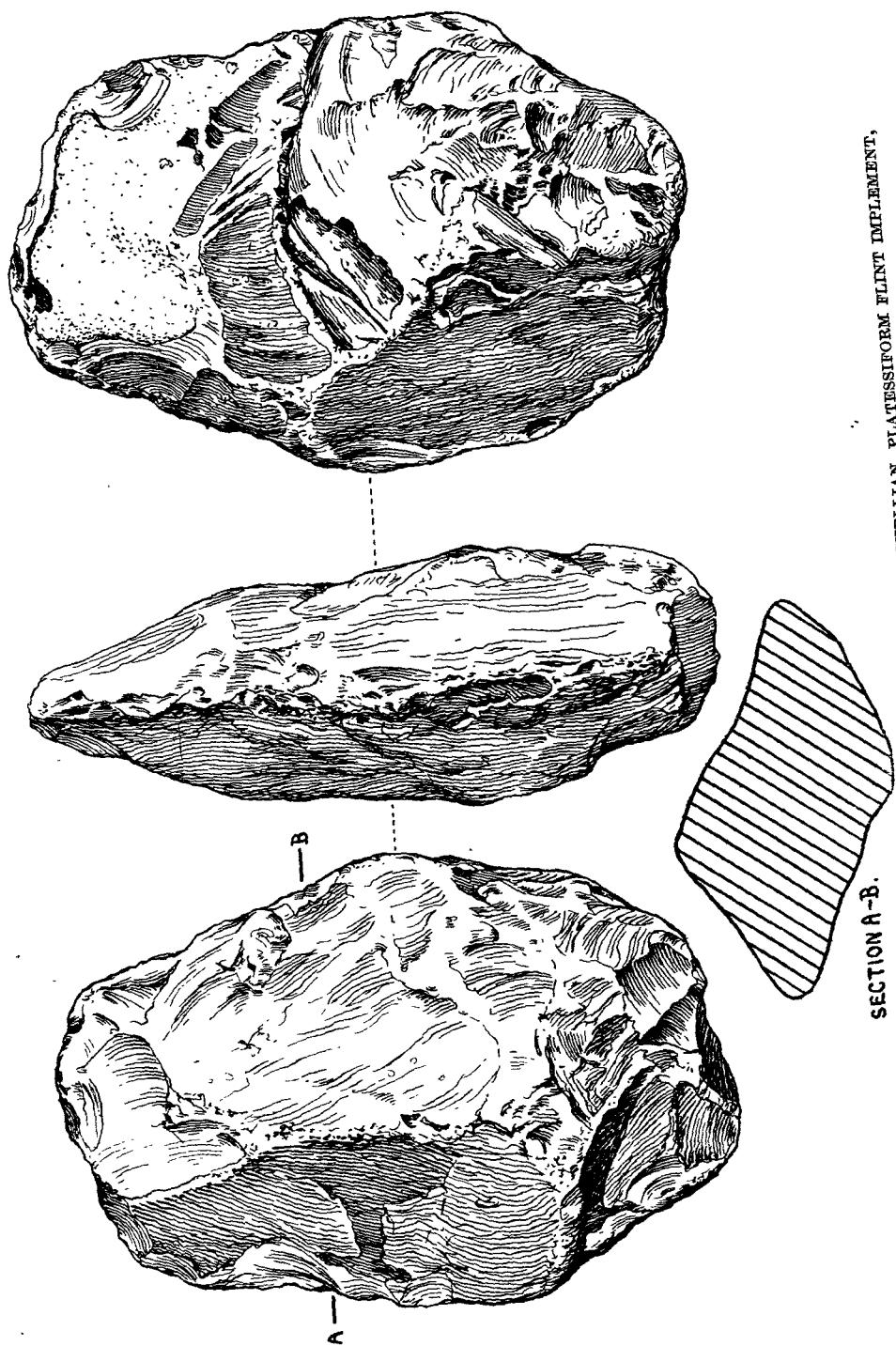
This specimen (Figs. 3A, 3B, and 3C) [found by Mr. Guy Maynard, of the Ipswich Museum, who on several occasions has accompanied me to Cromer] may be regarded as an Early Chelian, platessiform implement. It exhibits, on its surfaces, a number of large truncated flake-scars, and is of a roughly rhomboidal



FIGS. 2A AND 2B.—RIGHT AND LEFT LATERAL SURFACES OF ROSTRO-CARINATE FLINT IMPLEMENT FROM WORKSHOP-SITE AT CROMER. $\times \frac{2}{3}$

section. Mr. Reginald Smith has informed me that he has seen a very similar specimen, which was found at Baker's Hole, in the Thames Valley. The majority of the implements from this site are of the Mousterian Culture ("A Palæolithic Industry at Northfleet, Kent," *Archæologia*, vol. lxii, pp. 515–532), but the particular artefact to which Mr. Smith refers is of a more ancient date, and occurred as a derivative in the débris of the Mousterian workshop-site.

in the Pliocene "Forest-Bed" of Cromer, Norfolk.



SECTION A-B.
FIGS. 3A, 3B, AND 3C.—THREE VIEWS AND SECTION OF EARLY CHELIAN, PLATESSIFORM FLINT IMPLEMENT,
FROM WORKSHOP-SITE AT CROMER. $\times \frac{3}{8}$

The specimen illustrated in Figs. 4A, 4B, and 4C was found by me, and represents another example of an Early Chellian, platessiform implement. It exhibits a number of truncated flake-scars upon its surfaces, and is roughly rhomboidal in section. At the butt-end of the implement an area of cortex is observable (Fig. 4C), and this, as is the case with many of the Early Chellian "handaxes," was probably retained for prehensile purposes.

Figs. 5A, 5B, and 5C illustrate a specimen, found by me, which may be regarded as an example of the Early Chellian, batiform implement. Its upper surface (Fig. 5A) is composed of a number of flake-scars, while the lower surface (Fig. 5C) is formed by one plain area of fracture with bulb of percussion. The upper surface, being somewhat elevated towards the centre, the specimen exhibits a more or less triangular section, and would appear to be closely related, in its form, to the rostro-carinate implements.

The specimen illustrated in Figs. 6A and 6B represents the upper, anterior portion of an Early Chellian, batiform implement and was found by me. The upper surface is composed of several truncated flake-scars, while the lower is formed by one plain fracture-surface. The specimen is more or less triangular in section.

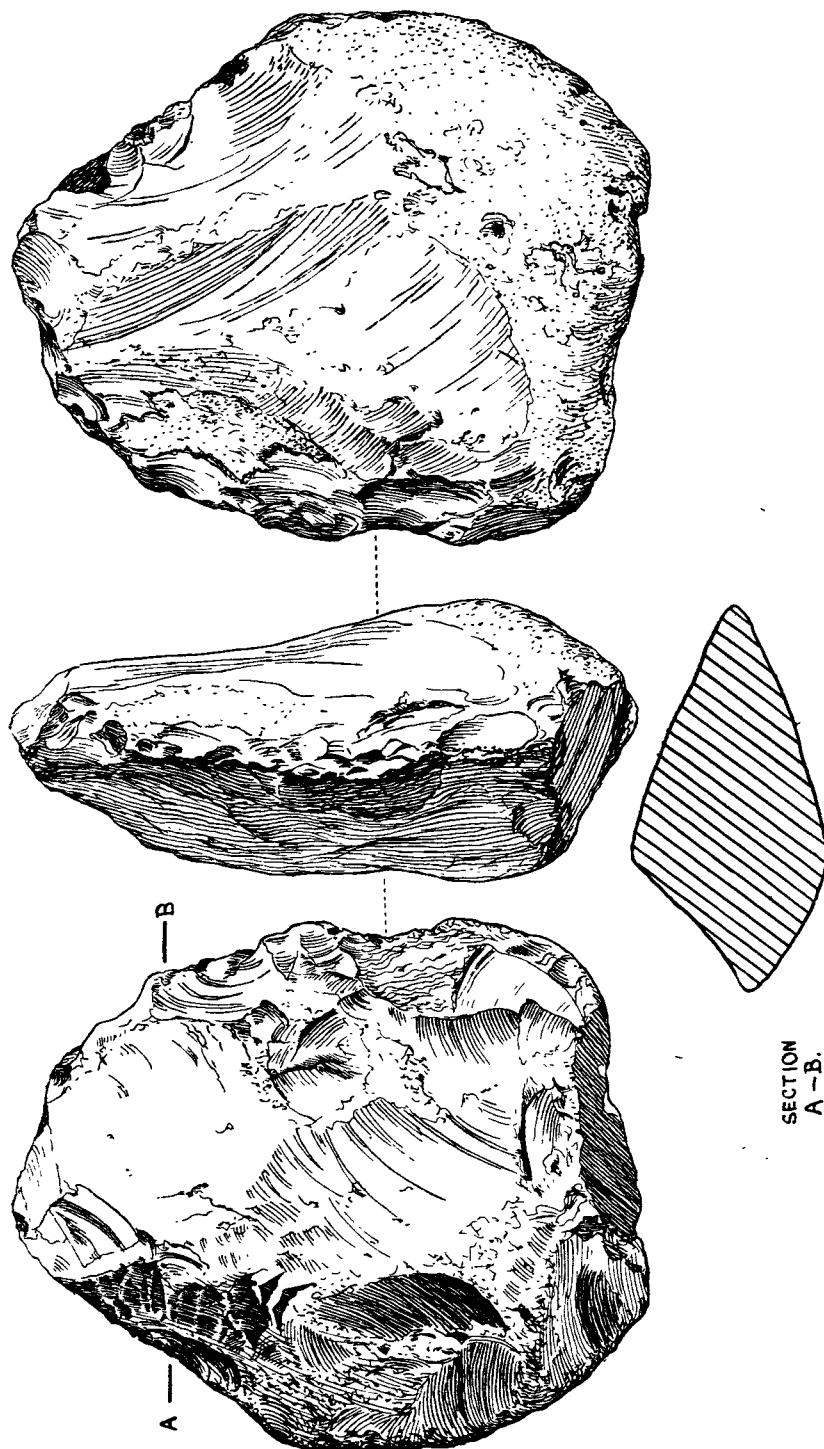
THE PALLING BEACH SPECIMEN.

The Palling Beach Specimen, which, however, may have been derived from the Cromer Workshop-site, or some similar exposure along the adjacent coast.

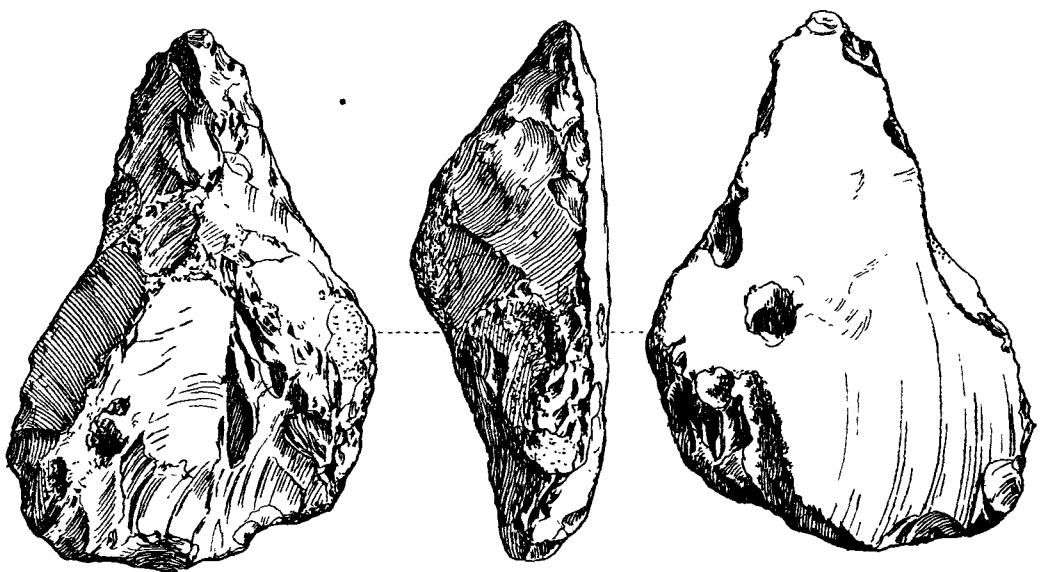
This implement (Figs. 7A, 7B, and 7C), which was found upon Palling Beach about the year 1906 by Mr. Randall Johnson, who gave it to Mr. A. C. Savin, of Cromer, is a well-made example of a platessiform, Chellian implement. It exhibits marked signs of rolling upon a beach, and a yellow-ochreous coloration precisely similar to that of many of the Cromer artefacts. The specimen is roughly rhomboidal in section. I do not wish to lay too much stress upon this implement as it was not found at the workshop-site under description. But in view of its technique and coloration, and, so far as I know, the absence of such specimens in the glacial deposits which rest upon the Cromer Forest-Bed series, it would seem probable that the implement was derived, originally, from the Cromer site, or from some similar exposure upon the neighbouring coast.

CHOPPING IMPLEMENTS.

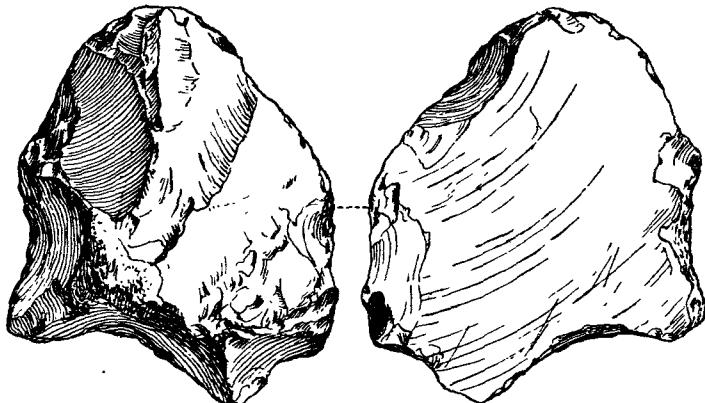
The specimen illustrated in Figs. 8A and 8B is a very massive and fine example of a chopping implement. It is made from a flake, and its under urface (Fig. 8B) exhibits a plain area of fracture with bulb of percussion. Its upper surface (Fig. 8A) is composed of several large truncated flake-scars, and the specimen possesses a broad curved "back" admirably adapted, by flaking, for comfortable prehension. The chopping-edge is more or less straight, and carries, upon either side, a number of



FIGS. 4A, 4B, AND 4C.—THREE VIEWS, AND SECTION, OF EARLY OHELIAN, PLATESSIFORM FLINT IMPLEMENT FROM WORKSHOP-SITE, CROMER. X $\frac{3}{2}$



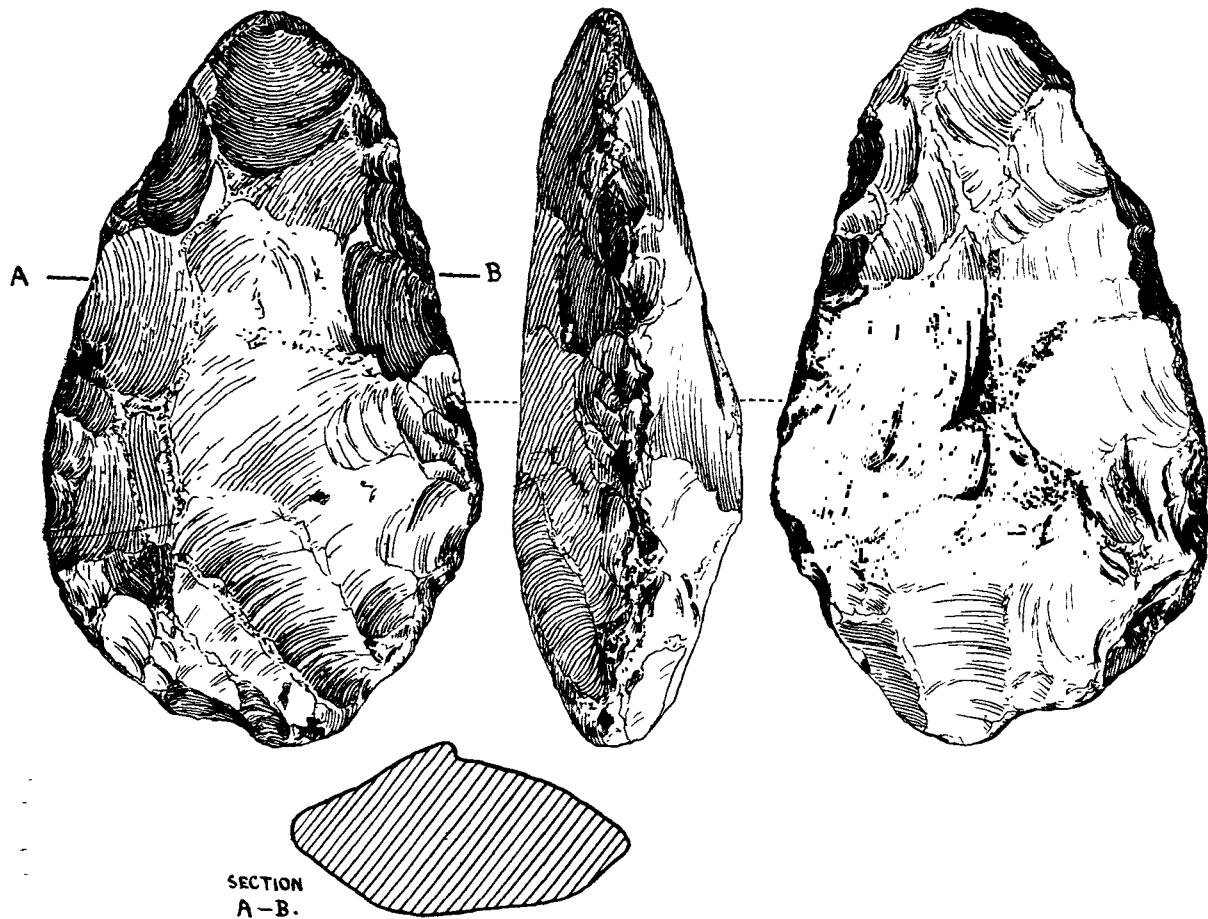
FIGS. 5A, 5B, AND 5C.—THREE VIEWS OF EARLY CHELLIAN, BATIFORM FLINT IMPLEMENT, FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$



FIGS. 6A AND 6B.—TWO VIEWS OF UPPER, ANTERIOR PORTION OF EARLY CHELLIAN, BATIFORM FLINT IMPLEMENT FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$

short and squat flake-scars, almost certainly caused by the use to which the implement was put.

Another smaller chopping implement is illustrated in Figs. 9A and 9B. It also is made from a flake, and its lower surface (Fig. 9A) exhibits a plain fracture-surface



FIGS. 7A, 7B, AND 7C.—THREE VIEWS, AND SECTION, OF CHELLIAN, PLATESSIFORM FLINT IMPLEMENT FOUND ON PALLING BEACH, NORFOLK. $\times \frac{2}{3}$

with *éraillure*. The upper surface (Fig. 9B) is composed of several truncated flake-scars, while the "back" of the specimen has been modified by the removal of flakes to ensure a comfortable handgrip. The more or less straight chopping-edge possesses, upon either side, a number of short and squat flake-scars, produced, in all probability, by the particular use to which the implement was put.

FLAKE IMPLEMENTS.

The specimen illustrated in Figs. 10A and 10B is an example of a flake implement. Its upper surface (Fig. 10A) bears a number of truncated flake-scars, while its lower surface (Fig. 10B) exhibits a plain area of fracture with bulb of percussion. The edge-flaking of the specimen, being confined principally to one side of the cutting-edge, it is presumed the implement was used as a *râcloir*, or side-scraper.

RACLOIRS, OR SIDE-SCRAPERS.

Figs. 11A and 11B illustrate a good example of a *râcloir*, or side-scraper. The specimen is made from a flake, and its under surface (Fig. 11B) exhibits a plain area of fracture with bulb of percussion. The upper surface (Fig. 11A) is composed chiefly of cortex, but the edge on the left-hand side has been modified by regular flaking, and this edge was apparently the functional portion of the implement.

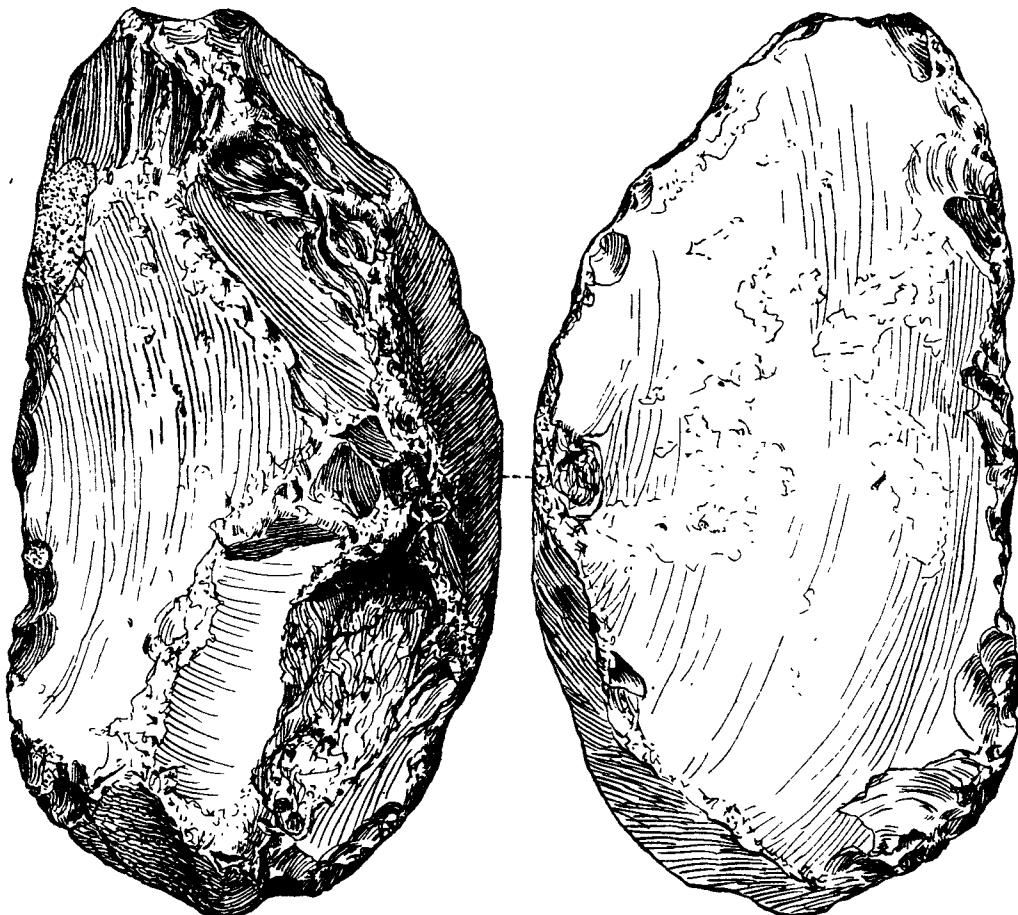
The specimen illustrated in Figs. 12A, 12B, and 12C is another example of a *râcloir*, or side-scraper. The implement is made from a flake, and its under surface (Fig. 12A) exhibits a plain area of fracture, upon which an *éraillure* and a number of fissures are developed. The bulb of percussion has, however, been removed by a flake struck from the upper surface. This latter surface (Fig. 12C) is composed, principally, of one large flake-scar, and the edge on the left-hand side has been modified by regular, and somewhat steep flaking, which gives to the implement its *râcloir*-like appearance.

POINTED IMPLEMENTS.

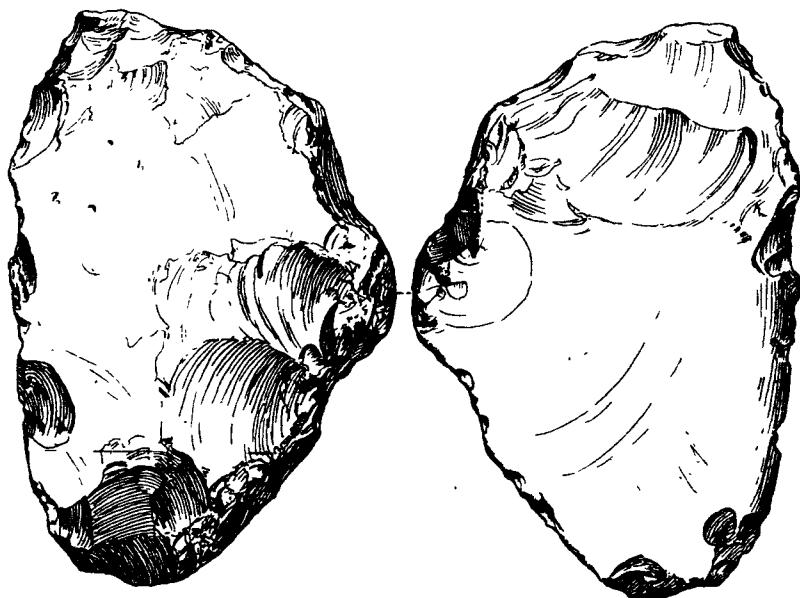
Figs. 13A and 13B illustrate a flake which has been trimmed to a point. The under surface (Fig. 13B) is composed of one plain area of fracture with bulb of percussion, while the upper surface (Fig. 13A) exhibits a strip of cortex and three truncated flake-scars. The pointed end (Fig. 13A) has been attained, in the usual manner, by flake-removing blows delivered upon a restricted area upon either side of the lower surface.

The specimen illustrated in Figs. 14A and 14B is another example of a pointed implement. The upper surface (Fig. 14A) exhibits a plain area of fracture with bulb of percussion, while the lower surface (Fig. 14B) shows almost precisely similar characteristics. The pointed form has been attained by the removal of flakes along either side of the narrower end.

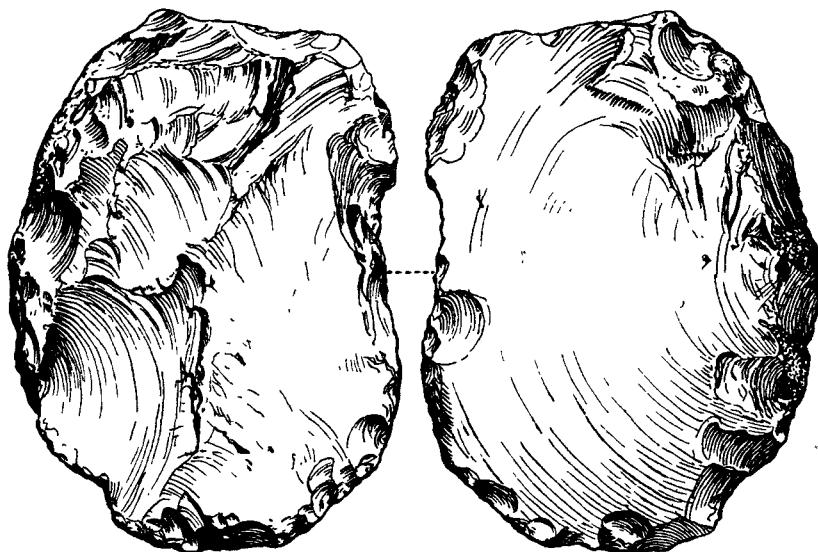
The occurrence of two "positive" bulbs of percussion, upon either side of one and the same specimen, though it can be paralleled in other implements from the Cromer site, is not, so far as my knowledge extends, met with very often in other flint cultures. It is usual to find a positive bulb of percussion upon one side of an implement of this class, and, upon the other side, the "negative" hollow of percussion. As the production of two positive bulbs could, however, be due to mere chance while flaking, it is not possible to assume that the occurrence of two such bulbs,



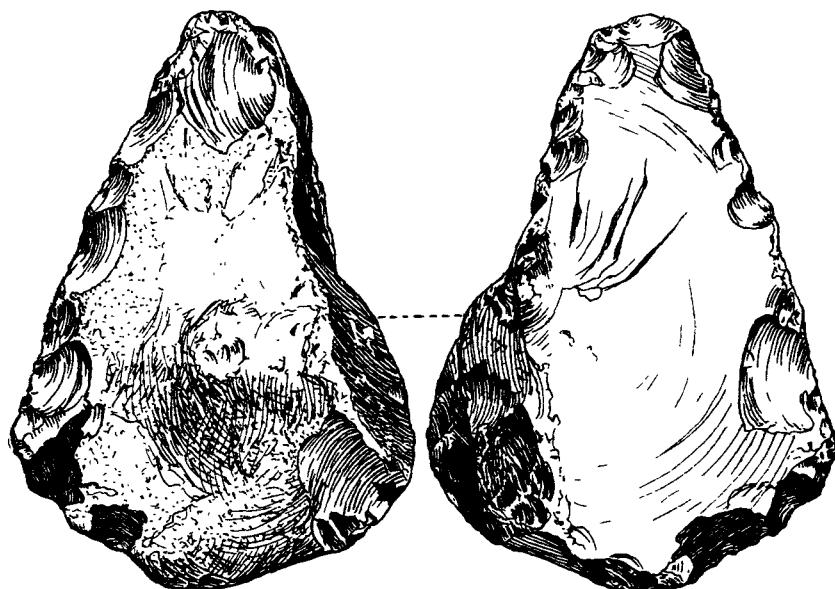
FIGS. 8A AND 8B.—TWO VIEWS OF LARGE CHOPPING IMPLEMENT IN FLINT,
FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$



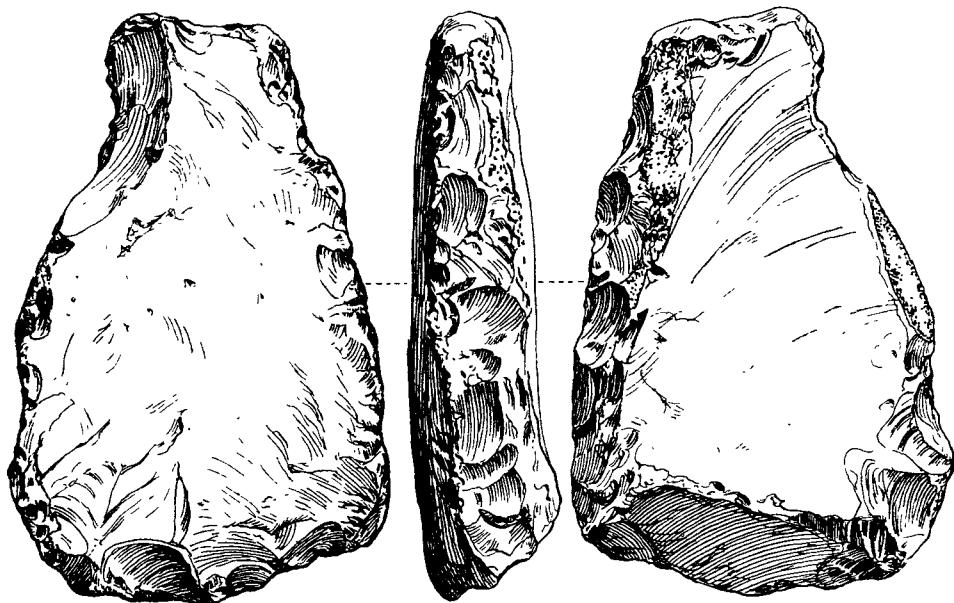
FIGS. 9A AND 9B.—TWO VIEWS OF CHOPPING IMPLEMENT IN FLINT,
FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$



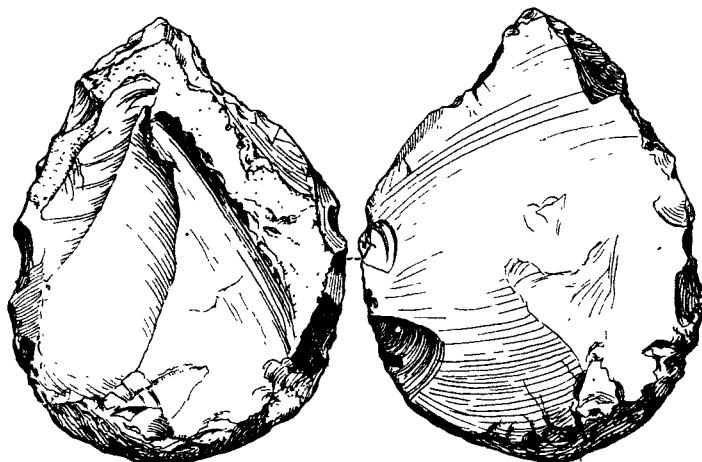
FIGS. 10A AND 10B.—TWO VIEWS OF FLAKE IMPLEMENT IN FLINT,
FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$



FIGS. 11A AND 11B.—TWO VIEWS OF *racloir* IN FLINT,
FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$



FIGS. 12A, 12B, AND 12C.—THREE VIEWS OF *nâcloir* IN FLINT,
FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$

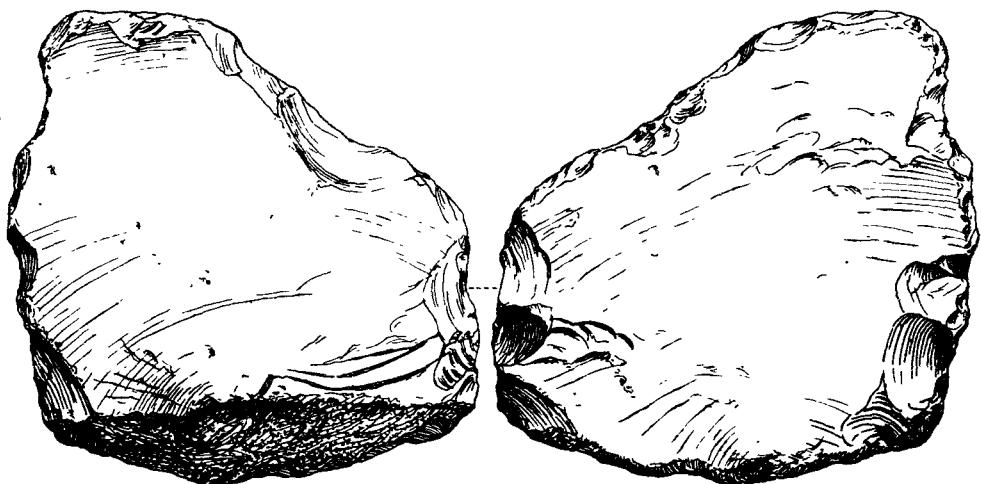


FIGS. 13A AND 13B.—TWO VIEWS OF POINTED IMPLEMENT IN FLINT,
FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$

upon a few of the Cromer flints, indicates the adoption of a special and unusual technique on the part of the ancient flint-flakers. The peculiarity, nevertheless, seems of sufficient interest to be noted.

SCRAPERS OF ORDINARY TYPE.

One example of a large scraper of the ordinary type is figured (Figs. 15A, 15B, 15C, and 15D). It is made from a flake, and its lower surface (Fig. 15D) exhibits a plain area of fracture caused by percussion. The upper surface (Fig. 15A) is composed chiefly of cortex, but the broad end and the right-hand side of the specimen have been modified by flaking to form scraping-edges. It would thus appear that the implement was used as an "end" scraper, and also as a side-scraper. Such specimens are generally known as of the *grattoir-râcloir* type.



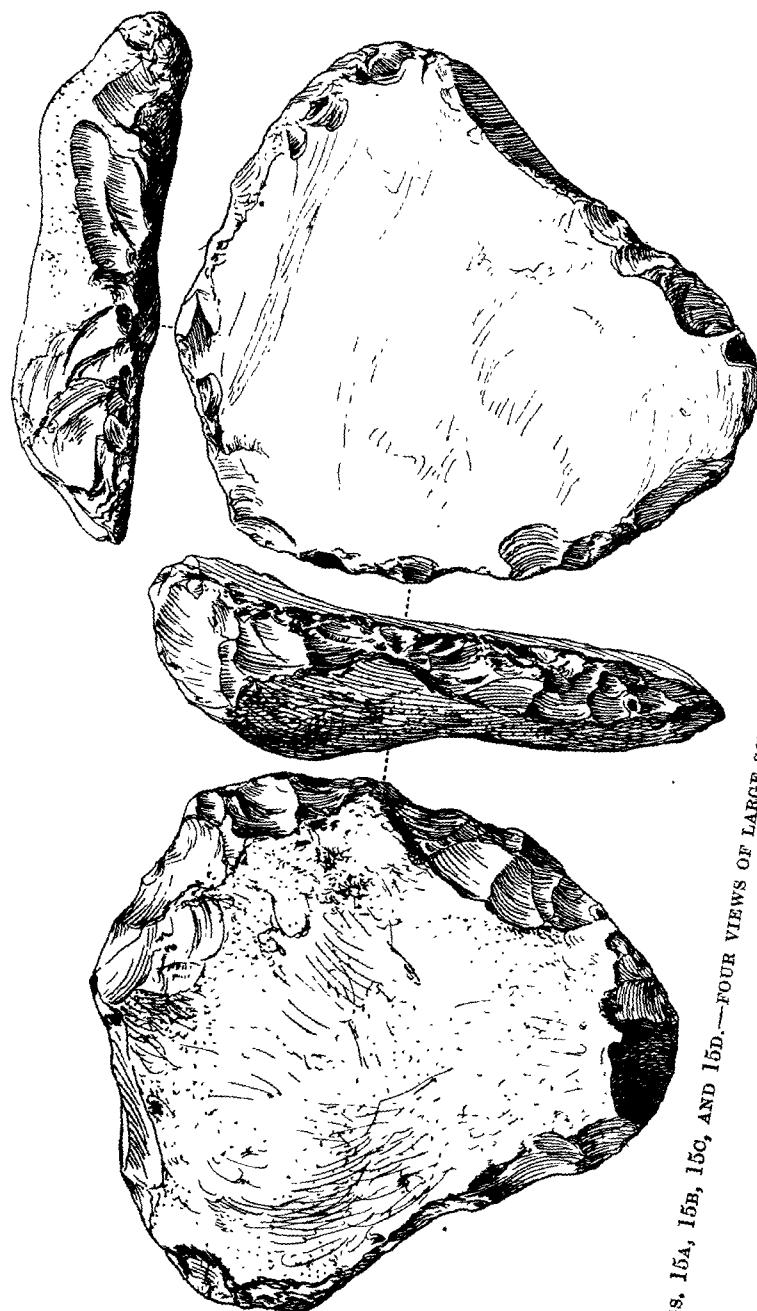
FIGS. 14A AND 14B.—TWO VIEWS OF POINTED IMPLEMENT IN FLINT, FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$

The specimen illustrated in Figs. 16A, 16B, and 16C can also, probably, be classed as a scraper of ordinary type. It is made from a large flake, and its lower surface (Fig. 16C) exhibits a plain area of fracture with a slightly developed bulb of percussion. Its upper surface (Fig. 16A) is formed of several large truncated flake-scars. The scraping-edge is more or less straight, and gives to the implement a somewhat square appearance. From the condition and coloration of this specimen it would appear to be referable to the culture which, as has been mentioned, is slightly later in date than the ochreous implements found at Cromer.

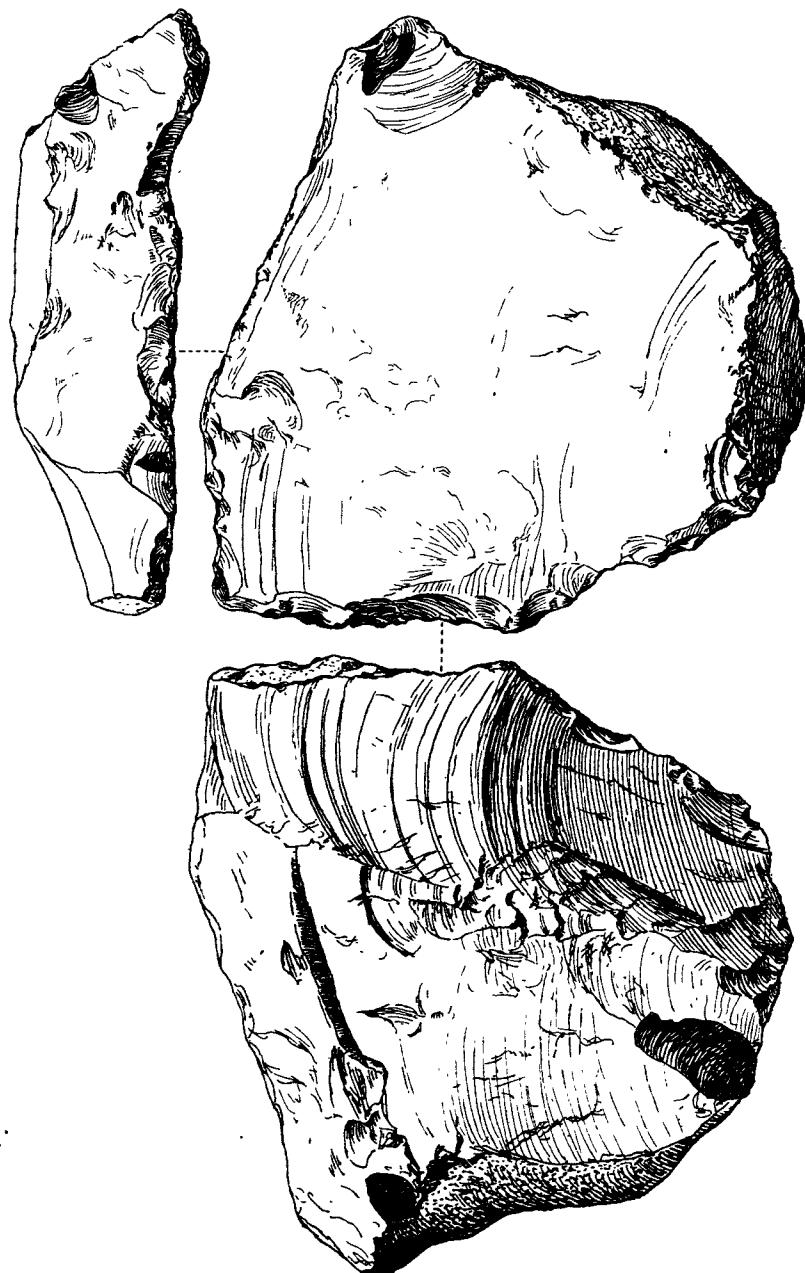
The term "ordinary" scraper is used to denote the most common form of this class of implement, and to differentiate between these and others which are made from long narrow flakes of flint, and those which are solely side-scrapers or *râcloirs*.

in the Pliocene "Forest-Bed" of Cromer, Norfolk.

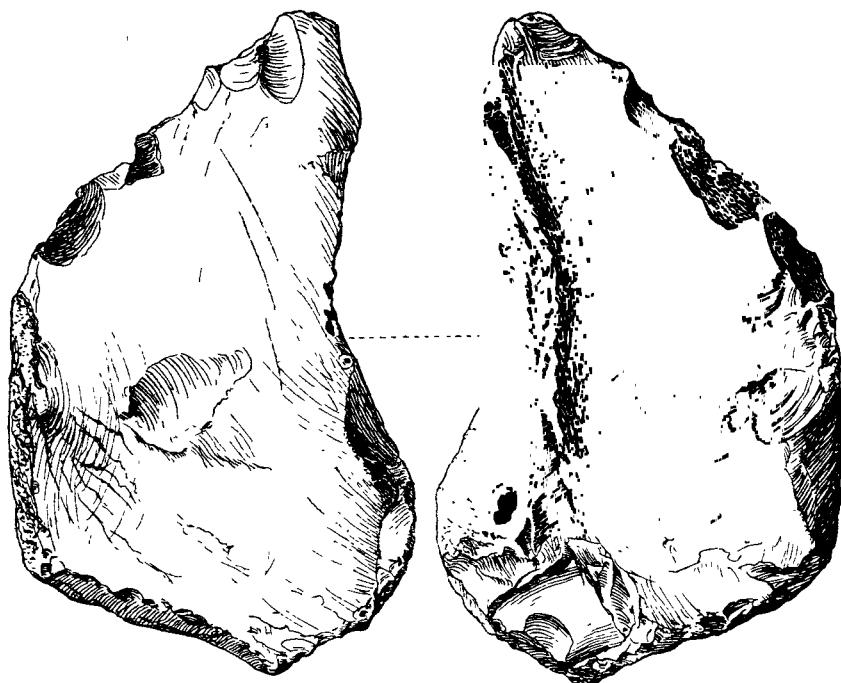
407



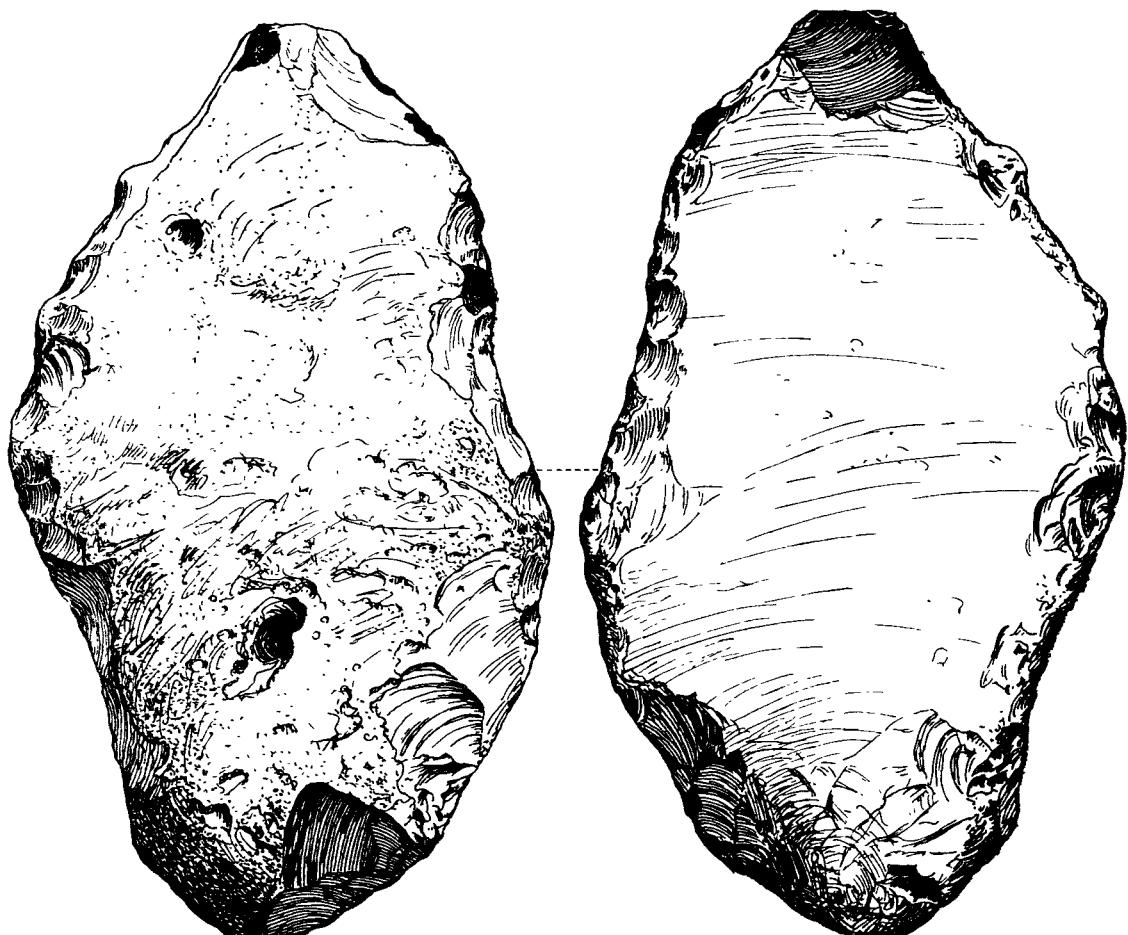
FIGS. 15A, 15B, 15C, AND 15D.—FOUR VIEWS OF LARGE SCRAPER IN FLINT, FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$



FIGS. 16A, 16B, AND 16C.—THREE VIEWS OF LARGE SCRAPER IN FLINT, FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$



FIGS. 17A AND 17B.—TWO VIEWS OF FLAKE IN FLINT, FROM WORKSHOP-SITE,
CROMER. $\times \frac{2}{3}$



FIGS. 18A AND 18B.—TWO VIEWS OF LARGE FLAKE IN FLINT, FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$

FLAKES.

Flakes upon the Cromer site are very numerous and of varying shapes, though the wide, short variety is the most common.

Figs. 17A and 17B illustrate a flake of the latter type. Its upper surface (Fig. 17A) exhibits a very symmetrical bulb of percussion and *éraillure*, while the lower (Fig. 17B) is composed, chiefly, of one large truncated flake-scar. Many of the Cromer flakes exhibit prepared striking-platforms, but the blows responsible for a large number were delivered upon a more or less flat area of cortex.

The specimen illustrated in Figs. 18A and 18B is a good example of one of the large flakes found at Cromer. Its upper surface (Fig. 18B) exhibits a plain area of fracture with bulb of percussion and *éraillure*, while the edge, on the right-hand side, has been modified by the removal of a number of small flakes. The lower surface (Fig. 18A) is composed chiefly of cortex, but both its long edges bear flake-scars, indicating that the specimen was used for some purpose.

Figs. 19A and 19B illustrate the flake, already mentioned, which was picked up on the foreshore at low water at West Runton by the late Sir John Evans, and given by him to Mr. Savin.

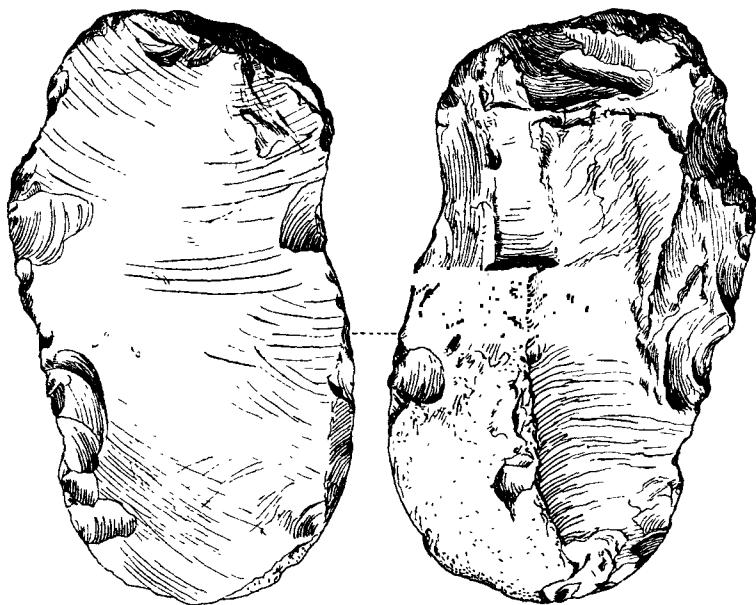
The specimen exhibits, on its upper surface (Fig. 19A), a plain area of fracture with a well-formed bulb of percussion, and the left-hand edge of this surface has been modified by flaking, demonstrating that the flint was put to some cutting or scraping purpose. The lower surface (Fig. 19B) is formed of a strip of cortex, and several flake-scars, the largest of which might conceivably have been produced by what is known as "starch fracture." The coloration of the specimen is in every way comparable with many of the artefacts found by me at Cromer.

The specimen illustrated in Figs. 20A and 20B represents one of the smaller flakes found upon the Cromer site. Its upper surface (Fig. 20A) exhibits a plain area of fracture, with prominent and well-formed bulb of percussion and *éraillure*. Its lower surface (Fig. 20B) is formed of one truncated flake-scar.

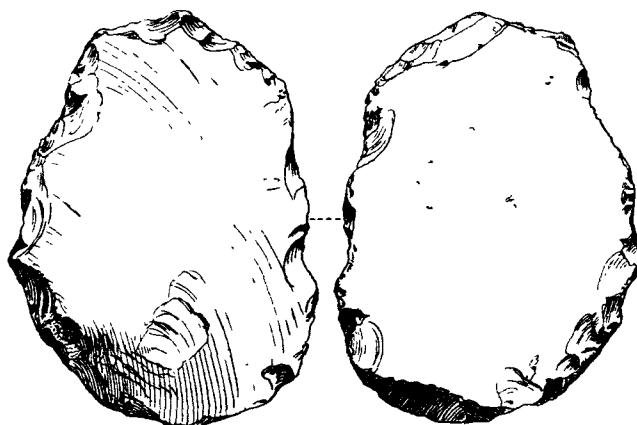
In addition to the specimens of different types described above, there remain one or two artefacts found at Cromer, which, by reason of their unusual form and size, deserve to be mentioned.

One of these, which was found by Mr. Maynard, appears to be an Early Chelian, batiform implement of abnormal size. Its upper surface towards the broad, butt-end, is composed of cortex, while towards the narrow end the flint has been flaked extensively, so that it has assumed the well-known outline of some of the Early Chelian implements. Its lower surface exhibits a number of flake-scars, and some amount of cortex. It would seem that this specimen, which measures 10 inches in greatest length, 6 inches in greatest width, and 4 inches in greatest thickness, represents an implement in process of manufacture.

Another specimen of peculiar form was found by me, and is made from a large, long flake which exhibits, on its lower surface, a plain area of fracture with poorly-



FIGS. 19A AND 19B.—TWO VIEWS OF FLAKE IN FLINT FOUND BY
SIR JOHN EVANS IN 1884, ON FORESHORE AT WEST RUNTON. $\times \frac{2}{3}$



FIGS. 20A AND 20B.—TWO VIEWS OF FLAKE IN FLINT,
FROM WORKSHOP-SITE, CROMER. $\times \frac{2}{3}$

developed bulb of percussion, and *éraillure*. Its upper surface possesses an elevated central ridge, the left-hand slope of which exhibits some amount of cortex, and several flake-scars. The longer edges of the upper surface have been modified by flaking. The implement, which measures $9\frac{1}{2}$ inches in greatest length, $3\frac{1}{2}$ inches in greatest width, and $2\frac{1}{2}$ inches in greatest thickness, is triangular in section, and would appear to have been used in the hand. A number of the shells of the modern barnacle are to be seen attached to this specimen. Amongst the artefacts collected at Cromer there occur certain wedge-shaped forms, and others which, by their shape and flaking, appear to have been used as push-planes, but these are not sufficiently definite to justify the expense of illustration.

SUMMARY.

The discovery described in this paper appears to demonstrate that upon the foreshore exposed at low water at Cromer, Norfolk, there occurs a remnant of the lowest horizon of the Pliocene Cromer Forest-Bed Series of deposits.

The remains of this lowermost deposit are now intermingled with a large number of flints and other stones, which, by their coloration and condition, are clearly referable to the well-known sub-Crag Stone-Bed of Norfolk.

The Weybourn Crag, no doubt, at one time covered the Stone-Bed to a considerable depth, but the Crag was extensively eroded, and in places entirely removed, before the earliest Cromer Forest-Bed deposits were laid down. The large number of ochreous artefacts recovered at Cromer seem to have been made by a race of people living upon the eroded surface of the Weybourn Crag, and, as their implements are without doubt made from Stone-Bed flints, it would appear that, upon their arrival in the district now called Cromer, the Crag had been sufficiently eroded to expose the underlying Stone-Bed. Many of the large flints comprising the Stone-Bed at Cromer are seen to bear flake-scars exhibiting the same ochreous coloration as the majority of the specimens collected, and the conclusion is drawn that these large flints represent the cores from which the ancient Cromerians struck their flakes. The coloration of the Stone-Bed flints is quite different from the ochreous specimens, and the fracture-surfaces of the latter are clearly of considerably later date than those of the former. But the majority of the large Stone-Bed flints, many of which exhibit the ochreous flake-scars, are to all intents and purposes sedentary, and have moved but little since their original deposition in pre-Crag times. It is thus obvious that these large flints cannot have been derived from any deposit in the cliffs, and that the people who made the ochreous artefacts from the Stone-Bed flints must have done so before the laying down of the vast masses of glacial and other beds forming the cliffs of the north-east coast of Norfolk.

Judging from the fact that the late Mr. Clement Reid states that the Cromer Forest-Bed always rested with a "gravelly base" upon the surface of the underlying Crag, and that it is possible a land surface existed upon the Crag, it would seem

highly probable that the ochreous artefacts recovered are referable to the period of this land surface.

Flints of the kind collected do not, so far as my knowledge goes, occur in the Estuarine, or Freshwater, divisions of the Cromer Forest-Bed Series.

The ochreous implements recovered appear to pre-date the great Pleistocene glaciations, and, as would be expected, are practically free from striations.

The specimens were collected upon an area of foreshore of about 150 yards by 100 yards, and comprise implements, flakes, "rough-outs," and [?] hammer-stones. The occurrence of such an assemblage of artefacts in this limited area points to the conclusion that an actual workshop-site is represented at Cromer.

Amongst the implements collected occur some finished, and some unfinished, examples of platessiform and batiform implements, which, by their form and flaking, are referable to Early Chellian times. The other forms of flaked flints recovered consist of rostro-carinate implements, choppers, *râcloirs*, or side-scrappers, round scrapers, flake-implements, and points. Thus this discovery of an Early Chellian workshop-site enables us to ascertain, in a much more complete manner, the various kinds of implements made during this cultural phase, than was possible from an examination of the Early Chellian specimens hitherto found scattered about in what are known as river-gravels.

It would appear that the occurrence of flaked flints of rostro-carinate form in the workshop débris at Cromer supports my published opinion that the earliest Chellian platessiform, and batiform implements were derived from the rostro-carinates, and that the discovery of a workshop-site of Early Chellian age in the Pliocene Cromer Forest-Bed also bears out my tentative suggestion as to the Pliocene age of the Early Chellian implements, published in the *Geological Magazine* (vol. lvii, No. 671, May, 1920) prior to the discovery of the specimens described in this paper. It is hoped that further investigations may be carried out at Cromer during the coming year (1921).

ADDED NOTE.

Since the above paper was read I have paid further visits to the Cromer coast, and the result of these visits may be summarized as follows:—

(a) *Ochreous Flints found in situ*.—It will be noticed that in the foregoing paper (p. 385) I express the belief that the ochreous flints found upon the foreshore at Cromer are referable to the lowermost division of the Cromer Forest-Bed deposits. In May last, while in company with my friend, Mr. Frank Barclay, of Cromer, I discovered (*Nature*, June 9th, 1921) two flints embedded in the surface of the sub-Crag Stone-Bed occurring in, and at the foot of the high cliffs forming Beeston Hill, Sheringham. The larger of these two specimens is a roughly-shaped flint, such as occur in quantity upon the foreshore site at Cromer, and exhibits yellow stained surfaces precisely comparable, so far as colour is concerned, with many of the lighter coloured Cromer artefacts. The other specimen is a flake of small size, with bulb

of percussion, radiating fissures, and *éraillure*, and exhibits a whitish coloration on the bulbar surface, which is encroached upon extensively by the yellow staining. Both the flints show a well-marked band of black, unchanged flint, under the layer of cortex.

This discovery was corroborated by further finds in the month of July, when I was fortunate in recovering seventeen more yellow stained flints *in situ* in the upper portion of the Stone-Bed in the base of Beeston Hill (*Nature*, vol. cvii, p. 684). During the present month (September) I again visited Cromer, and with Mr. J. E. Sainty, who has given me great help in this matter, proceeded to examine the Stone-Bed and immediately overlying deposits, resting upon the upper surface of the large chalk erratic exposed in the cliff a little distance to the north-westward of East Runton Gap. The chalk erratics at this place are well known (*The Geology of the Country around Cromer*, Explanation of Sheet 68E, Clement Reid, p. 101). Mr. Clement Reid was of the opinion that these boulders of chalk need not have been moved more than a few hundred yards from their original bed (*The Geology of the Country around Cromer*, p. 115), and with this view I am in agreement. Above the large erratic, and the deposits mentioned as occurring upon its upper surface, occurs a great thickness of glacial material (Contorted Drift), but it is possible, by climbing up the cliff, to examine a considerable extent of the exposed section of Stone-Bed. In the surface of, and beneath, a thin layer of stoneless sand which rests upon this bed, were found a number of flints exhibiting the typical yellow staining of many of the foreshore specimens, and I presume that the stoneless sand represents the lowermost deposit of the Cromer Forest-Bed series. It is to be noted that the artefacts found upon the foreshore at Sheringham and at East Runton do not, except in a few cases, exhibit the deep ochreous coloration of the majority of the Cromer specimens. And the flints above described as being found *in situ* are coloured a lighter yellow, but precisely comparable with that exhibited by the less deeply coloured specimens from Cromer. Further, we have not yet found *in situ* any specimens so demonstrably of human origin as the best of those picked up upon the foreshore, but this can perhaps be explained by the vast number of flints which it is possible to examine at low water, as compared with the comparatively few exposed in the cliff sections. On p. 390 (footnote) of the foregoing paper I refer to an ochreous flint found at Cromer, which bears upon a portion of its flaked surface a mass of ferruginous concretionary material, and an examination has shown that this is quite comparable with the material adherent to many of the specimens discovered *in situ*. These discoveries would appear to make it in the highest degree probable that the flints found by me upon the foreshore at Cromer are referable to the lowermost division of the Forest-Bed deposits, and that they are not ordinary shore specimens.

(b) *Erosion of the Coast at Cromer*.—In 1764 there was published a volume entitled *Great Britain's Coasting Pilot: A New and Exact Survey of the East Coast, by Captain Greenwood Collins, Hydrographer in Ordinary to the King's*

Most Excellent Majesty. (London : J. Mount and T. Page, on Tower Hill.) An examination of one of the maps in this volume, "Tracing of the Chart of the Cromer Coast, etc.,," shows that, in 1764, the hills upon which the Great Eastern Railway now stands were situated about 3 miles from the shore. This distance has now been reduced to about $1\frac{3}{4}$ miles, so that if the old map quoted is accurate, considerable erosion has taken place in the last 157 years.

(c) *The Origin of the large Areas of Flints upon the Foreshore from Cromer to Sheringham.*—It would seem clear that the large accumulations of flints exposed upon the foreshore at low-water, from Cromer to Sheringham, are in the main referable to the sub-Crag Stone-Bed and immediately overlying deposits. These deposits, which at one time were *in situ* upon the foreshore, have apparently had the iron and other material cementing the flints in them together removed by the action of the sea, and the stones have gradually sunk down as this process has gone on. In many places along the coast areas of Stone-Bed (in one place opposite West Runton I measured an exposure of Stone-Bed 4 feet in thickness) may be seen still *in situ* upon the chalk. These areas stand up about a foot or 18 inches above the general level of the surrounding chalk surface, and thus enable us to see that comparatively little of that surface has been eroded away since it was exposed to the action of the sea.

(d) *The practical Immobility of the large Flints upon the Foreshore at Cromer.*—Enquiries have been made of people who have resided at Cromer for many years, who are in the habit of examining and taking notice of the foreshore exposures, and there seems no doubt that the large flints exposed at low water at Cromer are, to all intents and purposes, sedentary. The area of water between the beach and part of the flint-bed at this place is known locally as the "Horse-shoe Pond," thus showing that it is of a "permanent" character. Further, it is to be noted in this regard that a wreck which went ashore at Cromer some years ago has remained in the place where it struck, and the cement blocks from a wreck which went ashore between East and West Runton fifty years ago (as I am informed) have not been transported by the action of the sea.

Several of the flints mentioned above as having been found *in situ* exhibit patches of white, and also blue, coloration. Upon such surfaces the yellow stain has been imposed, and this fact supports the view expressed in my paper (p. 392) that the Cromer specimens were first whitened upon an ancient land surface, and afterwards stained by contact with ferruginous material in the deposit in which they were so long embedded. A very careful examination of all the material at my disposal has convinced me that the true ochreous staining is not being formed at Cromer at the present day. As I have mentioned in my paper (p. 392), I have found, associated with the ochreous flakes upon the foreshore at Cromer, a few blue flakes and a still smaller quantity of black examples. These latter I was inclined to regard as of natural origin, but in view of the discovery of what appear to be definite implements

in black, unchanged flint, I no longer look upon these specimens as having been produced, necessarily, by natural percussion.

The discoveries which I have made upon the Norfolk coast since my paper was read have confirmed me in the opinion that these ochreous flints represent the débris of an Early Chelian-palæolithic workshop-site referable to the lowermost division of the Cromer Forest-Bed Series of deposits. The finished implements of platessiform and batiform type which have been found might, by some, be referred to pre-Chelian times, but that is a matter upon which opinions differ widely, and I prefer to regard such specimens as marking the earliest phase of the true palæolithic industries.

Mr. Brice Higgins exhibited at the London Meeting of the Prehistoric Society of East Anglia, in 1919, two ochreous flints found by him at the foot of the cliff to the east of the pier at Cromer. These specimens were shown to me by the discoverer, and there seems little doubt but that Mr. Higgins must have the credit for having been the first to find ochreous flints at Cromer. But at the time of their discovery the real import of these specimens was not realized.

During the discussion following upon the reading of my paper in London, it was suggested by one of the Fellows, Mr. A. S. Barnes, that the ochreous flints collected by me upon the foreshore at Cromer might be merely modern knappers' flakes produced in the roughing-out of flints for church and house building. As is well known to anyone visiting the Cromer district, flint nodules, "dressed" or otherwise, have been used freely for many hundreds of years in the building of various kinds of edifices in that area. And there seems little doubt but that some of the "roughing-out" of the flints gathered from the shore took place upon the surface of the cliffs at East Runton and other places. As will be gathered from a perusal of the foregoing paper, the flints from the Cromer site exhibit deep and very strongly marked stainings upon their flaked surfaces. Such staining, so far as we know, can be produced only upon the surface of a flint which has been modified by what has been termed "patination." This condition of the fracture-surfaces of a flint appears to have the effect of making these surfaces absorbent, thus enabling the staining agent to operate. And this conclusion has been, in a measure, tested and confirmed by experiments carried out by the late Dr. Canton and myself several years ago. I am unaware of any evidence supporting the belief, if such exists, that an "unpatinated" flint can be stained in the manner of the Cromer artefacts or other early Palæolithic implements exhibiting an almost identical coloration. But, at some places upon the foreshore and beach in the vicinity of Cromer, it is possible to see stones, lying within certain restricted areas, which exhibit a ruddy coloration which extends over both their cortical and broken surfaces. This coloration, which is quite dissimilar to the ochreous staining upon the flints occurring at the Cromer site, is, without doubt, due to ferruginous streams, which, issuing from the cliffs, spread over a certain area of the beach and foreshore.

Again, at low water, it is possible to see, upon many of the flints exposed upon the foreshore, a thin layer of some marine vegetable growth of a reddish-purple colour. This can, however, be removed with the blade of a knife, and in most cases, when so removed, leaves no stain behind. In other, and less frequent, cases a slight stain is left upon the flint, but the coloration remaining is not of the same kind as that upon the Cromer artefacts. Further, and apart from the foregoing evidence, a good proportion of the knapper's refuse which I have examined shows clearly that the foreshore flints which they were manipulating were already stained of the well-known ochreous colour when removed by them from the foreshore. It is evident, also, from an examination of the ancient, in some cases thirteenth-century, walls of Overstrand Church, and other churches in the neighbourhood of Cromer, that, at that period, the foreshore flints, of which these walls are mainly composed, had assumed the marked and unmistakable colorations, upon their ancient flaked surfaces, which are to be seen upon the artefacts collected and described by me. (This examination will show, also, that most of the flakes removed in shaping the large blocks of flint were built into the fabric.) If the staining of these artefacts is of modern origin, then, judging from the evidence of sites where ferruginous streams debouch upon the beach and foreshore, and where an imposition of colour upon the flints is in progress, *all* the specimens at the Cromer site should exhibit the ochreous staining, whereas it is common knowledge that this is not the case.

And the supporters (if such there be) of a belief in the modernity of this staining must be prepared to assert that since the thirteenth century a precisely similar series of colours has been imposed upon the flaked surfaces of the flints upon the foreshore. It is, however, clear that the Cromer site cannot have been exposed, owing to the recession of the cliffs, for much more than a hundred years; so that the time available for the patinating and staining processes is very short, and, in my judgment, quite inadequate. Further, as I have pointed out in my paper, the nature of the assemblage of the artefacts upon the Cromer site points to the former presence of an actual flaking site at this spot, and it is, for me, impossible to believe that any modern knappers would select a place covered twice daily by the tide for the scene of their activities. Finally, an examination of the illustrations of the specimens figured in this paper (or, better still, a visit to the British Museum, Bloomsbury, or to the Museum at Ipswich, where large series of the Cromer flints can be examined) will demonstrate that the implemental forms of these specimens are not such as are produced by modern flint knappers (the odd flakes of both periods would naturally, in some cases, resemble each other), and, I think, will convince most people that the Cromer specimens are indeed the handiwork of early Chelian Forest-Bed man.

I have presented, recently, a series of ochreous flints from Cromer to Professor Breuil, who allows me to publish his opinion upon them. Having first made it

clear that, as he has not made a study of the Cromer deposits, he is unable to give any opinion upon their geological age, and that he is referring solely to the flints found by me, he states : "I think it certain that your finds exhibit a veritable intentional flaking, not the work of sea-action, and still less the result of compression in the interior of the ground."



FIG. 1.—VIEW OF WORKSHOP-SITE AT CROMER, SHOWING JUNCTION OF SHINGLE BEACH WITH THE STONE BED.



FIG. 2.—VIEW OF WORKSHOP-SITE AT CROMER AS EXPOSED AT LOW TIDE. THE PHOTOGRAPH WAS TAKEN FROM THE TOP OF THE CLIFF.

ON AN EARLY CHELLIAN-PALÆOLITHIC WORKSHOP-SITE IN THE PLIOCENE
“FOREST-BED” OF CROMER, NORFOLK.

CIRCUMCISION RITES OF THE BECWANA TRIBES.

By J. TOM BROWN, L.M.S.

THE origin of the Bechuana race is hidden in the mists of antiquity. No living Mochuana seems able to give any account either of the time when, or the circumstances under which, the Bechuana of long ago branched off from the parent trunk, or separated from some already branched-off stem of the great Bantu race. The most learned of them do not seem to be able to trace back the history beyond a few centuries. This is not to be wondered at when we remember that all the history of tradition and custom has been handed down orally from generation to generation. The utmost they can do is to speak of the "long ago," or "the very long ago," with a traditional "long ago" of some legendary being called Bila. There is also a dim, distant past—prehistoric—sometimes referred to as "the time before Cose," who seems to have been a mythical controller of the destinies of men, or the weaver of the web of life.

Every road traversed, every enquiry entered upon, every trace followed, whether of the history of the tribal life, or of custom or rite or ceremony, lands one at the Cave of Lowe from which, in the days when the rocks were still plastic and took impressions of the feet that trod on them, the Bechuana issued forth with all the rites, ceremonies and customs they have to-day.

It is very difficult to discover whether the ignorance expressed by the Bechuana as to their past with its story, and their customs with their purpose, and their rites with their secrets, is not assumed, and the "I don't know," which is the reply so often given does not mean "I won't tell." To every question as to the meaning of things we either get the answer, "I don't know" or "It is Sechuana," i.e. a part and parcel of our life history, woven into our lives by the hand of Cose on the loom of time; and it may be that the esoteric meaning is purposely hidden from the alien and the uninitiated, from whom it is the pledged duty of the initiated to hide the inner meaning. If this expressed ignorance, real or assumed, operates in matters that do not appear to be esoteric, one can well understand not only the reluctance to tell, but also the determination to hide, from the outsider, whether of their own or an alien race, the secret ceremonies that are performed before the youths of either sex can enter into the rights, privileges, and functions of manhood and womanhood.

I have been asked to prepare this paper on the subject of the Circumcision Rites of the Bechuana, which form the initiation ceremony into the franchise of

the tribe, with the liberties and licence of maturity. I find this subject a difficult one, because in Southern Bechuanaland the majority of the people have long ago given up these ceremonies, although there has been a recrudescence in recent years, and a marked and enthusiastic revival this year. During thirty and more years I have made frequent enquiries, followed a trace here and there, and so have been able to gather some knowledge of the mysteries attached to the rites.

One leading native, whose knowledge of his people cannot be excelled, and whose acquaintance with their rites is based not only on the inside knowledge of the initiate, but also on the esoteric information handed down by a long ancestry of medicine men, assures me that it is a most difficult matter for any one, initiate or other, to unfold the meaning of circumcision. It cannot be interpreted by anyone, and there is no statement connected with its intricate ceremony that holds any promise of a revelation of its inner meaning. There are many expressions, allegorical and other, used in connection with the rites of male and female initiation, but there is no stability in the expressions, nor any fixity of language.

Originally it may have been, and probably was, a distinctly religious ceremony. In some circumcision camps erections are made of a more or less conical form which may or may not suggest a phallic origin. But neither among the Southern, nor as far as I have been able to gather among the Northern, Bechuana is there any such thing, though among the Bapedi in the Transvaal they are found. Among the Bakgalagadi, whom Mr. Sol. T. Plaatje, the editor of "*Tsala ea Batho*," considers to be the oldest, even if most decadent, of all the Bechuana tribes, there are found poles erected at their circumcision camps, marked with white and black or red stripes, which they call *medimako*, and which are objects of veneration and worship. These poles take the same place among the Bakgalagadi as the Cross does among some sections of the Christian Church, and are bowed down to and reverenced.

There are two expressions I have heard with regard to circumcision. One is *Tlhapisho*, a washing, and refers to the purification from youthfulness, the other is *Lesedi*, light, which I heard an old adherent of our Church at Motito using. He had once been a Catechumen, if not an actual member, and all his family had embraced Christianity. At the time of the ceremony he sent his grandson, by stealth, to the circumcision ceremony, with the request that the leaders of the ceremony would not *tima lesedi*—that is; not keep from him any of the light. These two expressions may throw some light on the original ideas connected with the custom.

The circumcision rites among the Bechuana are two. One is for the males and is called *Bogwera*, and the other for females and is called *Boyale*. Among some of the tribes there is a second edition of *Bogwera* called *Bogwera yo secho* or black *Bogwera*, but there are no rites attached to it, and its only object seems to be to narrow the gate of entrance into manhood, and to magnify the importance of the

rite. A male initiate is called *Mogwera* and a female *Nwale*. *Rra magwera* is the person, often the younger brother of the chief, from whom permission is asked to hold the ceremony, while the chief himself is referred to as *Setlhaba-molao*, but if he is a chief who has not been circumcised then he is *Rraperepe* or the ignorant one. But the names connected with these ceremonies are mostly allegorical. The chiefs of the *Bogwera* ceremony are spoken of as *Dinare* (Buffaloes) or as *Manoñ* (Vultures); the thorns with which the initiates are pierced, and the sharpened sticks which are thrust into their flesh, are called *Dichoshwane* (Ants), *Dinotshe* (Bees), and *Mentsane* (Mosquitoes).

The circumcision rites among the girls may take place at any time after they have attained the age of puberty, but that of the boys rarely takes place before the seventeenth or eighteenth year; but the age is not a fixed one, and is governed by the time at which the child or near relative of the chief is judged as being ready for the ceremony. Boys of an age near to that of the chief initiate enter with him. It is not necessarily a yearly ceremony, but when it takes place it is always at the time when the Kaffir corn harvest is drawing nigh—that is, about May—and the ceremony lasts about two months.

The life of a male *Mochuana* may be divided into three periods. First, childhood, when he wears a tiny skin apron called a *seope*, which dangles from a leathern thong which girdles the loins. The second stage begins when he has reached or is approaching the age of puberty, but is not considered ripe for the initiation ceremony. When this stage arrives his seope is taken away and he is given a *tsega*, which is usually made of the skin of a black and white or red and white kid. This garment, if garment it can be called, entirely covers the whole pubic and scrotal region, and passing between the legs is fastened both in front and behind to the thong that encircles his loins. This change is made the opportunity for a ceremony which may be said to begin the novitiate of the to-be-initiated youth. He is made to lie down with face to the ground, and with body stretched out, and is then well thrashed, being reminded of the faults of his childhood. He is warned against disobedience under threats of feeling the law of the "Vultures" already referred to, when he enters on his initiation. He is warned, too, against sexual intercourse, not because of any sin attached to it, nor because it is unchaste, but solely because of physical result. He is warned that sexual intercourse among the uncircumcised has the same connecting effect as when dogs indulge in it—that the internal organs of the woman are drawn out of her and many similar things too disgusting to mention. He is also told that when the time of his initiation arrives his manner of life will be made known, obedience to the commands of his elders will be received with approval, disobedience will be met with stripes, and really bad conduct with many stripes indeed.

From this time forth the boy is always having his eyes and thoughts turned towards the initiation ceremony. Parents and guardians strive to fashion him for

that day, and the lad himself is urged to get himself ready for that great occasion. This preparatory stage has no fixed formulæ. Each teacher has his own method, each his own warnings, each his own code of clean and unclean things, and each his own promises of what the end will bring. The chief and only object placed before the novice is the circumcision ceremony itself. It is solely done for him, and in his interests, in order that he may bring to pass the custom of his race, and to him that endures to the end it is a great victory, and he will receive a crowning honour.

But the steps towards the gate of manhood are many and difficult. It is a pathway paved with forbidden things that must be looked upon as taboo. No novice must on any consideration sit upon the sleeping mat of a woman, nor eat salt in any form. Salt is the great taboo for the novice. But apart from these there are great variations in the things forbidden. Certain foods must not be eaten, certain things must not be touched ; other things must not be done in certain ways. This is unclean ; that is an abomination. If any of these tabooed things are done, then when the day of initiation comes the novice will be beaten by the "Buffaloes" already mentioned, which means he will be severely punished by the leaders of the ceremony. But there are certain other things spoken of and emphasized, and they are common to all the various tribes. They refer to marriage, the physical marriage with all that it connotes. Initiation sets men and women free to indulge in sexual intercourse. If this is indulged in previous to initiation the penalty may be death or stripes, but after initiation they will be free to indulge themselves to their heart's content.

When the day of initiation comes there is great joy. The boys enter the ceremony as novices ; they will come out as initiates. They enter as boys ; they will emerge as men, taking their places in the tribal councils over the heads of the older and wiser who have not been initiated. They enter fettered ; they come forth as free men, free to treat the opposite sex as their lawful prey.

Two excellent papers have been written on the actual ceremony, together with some of its songs, by the Rev. W. C. Willoughby, and by the Rev. Noel Roberts, who was assisted by Mr. Winter, the son of a missionary. Mr. Willoughby's paper refers to the Bechuana, Mr. Roberts's to the Bapedi, or Transvaal Basutos, as they are sometimes, I think erroneously, called. I do not need, therefore, to do more than say that the operator is one not necessarily skilled in surgery, but who is selected for the purpose by his fellow "Buffaloes." The instrument used may be knife or spear with sharpened edge. No anæsthetic is used, and the pain is so severe that the patient shrieks with agony ; but he is closely held and cannot escape, and the noise of his cries is deadened by the shouting of all the crowd of previously initiated, who stand around and hide him from those to be operated upon. Nor can those, even if they hear his shrieks, escape if they wish to, for they are closely cordoned by attendant initiates. No aseptic treatment takes place beforehand and no antiseptic treatment after. The hæmorrhage is often severe and steps are

taken to check it by the application of herbal astringents immediately after the operation. When inflammation is severe the patient is not allowed to walk about, and the pain of the swelling is partly alleviated by a suspensory bandage in the form of a ring which is placed over the injured parts, and attached to a broad band round the waist. Should he need attention none but the ceremonially clean may assist him. Ceremonial cleanliness, in this case, consists of abstention from sexual intercourse for at least a year, and is usually undertaken by the old men in whom the fires of passion are dead. Owing to their ignorance of antiseptic medicine it is no wonder that some die from the effects of the operation alone.

But the ceremony is far from complete when the operation has been performed. It is now the time for the *Dinare* and the *Manoñ*, together with their assistants, to submit the initiates to the ordeal. The ordeal consists of chastisement, of vengeance for disobedience to parents and elders during the previous years. It is to teach them, to develop them, to ensure that there shall be no rebelling against the ancient ways, or walking in strange paths. In short, it is to bring them to the full heritage of their birthright. All this the novice had heard of during his novitiate, and he had been warned on account of the chastisement that would be meted out to refrain from disobedience and to obey all, that on this day of days he might be acclaimed as an obedient child, and so escape many stripes. The initiate is placed in the midst of the attendant lictors, and if he has been a dutiful and obedient son his good deeds, his obedience, etc., are announced by his sponsors before all the assembled host ; his obedience is praised and he escapes with few stripes, for his faults have been few. But it is not so with the disobedient and wicked. They are severely punished. The faults of the wicked child are set out in detail, and he has to confess to the various acts of wrong-doing, repeating in detail all his misconduct, relating the very words of the curses he has uttered, and while he is doing so, he is beaten with the hand and with sticks, and thorns and sharp-pointed sticks and thorns are made to pierce his flesh. He is required to recite them over and over again lest he forget, while all the while the "ants" and "bees" and "mosquitoes" are made to bite him. There is no escape. He must confess in full, and the very bad are handed over to the "Vultures" aforementioned, while the moderately bad receive stripes in accordance with their deeds. At the best it is torture ; at the worst it is death, for oftentimes the initiate is laid on his back with head bent back to the shoulders, and the tensely stretched throat is struck with a stick or the hand or a bone, and this act of chastisement not infrequently causes death. I am assured that orphans and the children of the very poor often die as the result of this treatment.

During all the time the initiate must lie at night without any covering, entirely naked, and one can realize what that must mean on the uplands of Southern Bechuanaland where the frosts are very severe in June and July. A little refuge from the biting winds is provided in the shape of a slight bush enclosure.

This treatment of the initiate goes on more or less during the whole period of the ceremony, and the theory that he must be taught endurance, and reverence for the customs of his fathers and traditions of his elders, and the maintenance of everything Sechuana, is made the excuse for thrashings with rods and piercings with thorns, and suffering generally. Before the initiate is ever the thought that all he endures is necessary to attaining to the manhood that carries with it privilege, licence, and honour.

But the time is not solely occupied in these things, though every act has its significance, and each duty demanded or act prohibited contains a lesson to be learnt. Some of the time is spent in hunting, much in learning the inwardness of the ceremony. Worship which consists in shunning certain things, or in the bowing down to others, is indulged in, but there is no idea of a personality that is being worshipped, though there may be a dim idea of the spirit that underlies all things. The teaching is entirely of an oral character and has as its medium the *dipina* or songs of the *Bogwera*, and the *dikoma* or songs of victory. The chief song is the Song of the Salt. Just as salt was the great taboo in the days of the novitiate so this song in its praise, extolling its excellencies, is the great song of the *Bogwera*. Rev. Noel Roberts has given it in some fullness in his pamphlet. It is a song common to all the *Bogwera* camps.

The service of the Song of the Salt is held every morning and every evening during the time of the ceremonies. The ritual connected with it is a very elaborate one, and none but experts and the ceremonially clean can take part in it with the initiates. The arrangement, too, of the sacred place is carried out with great care, and the celebrants must wear new Sechuana shoes. The arrangement of the different partakers on this service is as follows. On one side of the sacred place rows of sacred poles are placed. These poles are used from time to time and are buried in secret places during the interval between one ceremony and the next. In these rows behind the poles are placed the initiates, each having a bundle of thin twigs closely bound together with sinew from the neck of an ox. Boys from ordinary families have bundles made up of twenty-four twigs, but the sons of the heads of the tribe have bundles containing twelve twigs only. These bundles are called by the allegorical name of *pholo ea podi* (goat rams) because the goat ram is the symbol of lawlessness. These bundles called *dithupana* are smeared with magic medicine before they are given to the initiates. The *dithupana* of the female initiates are made of Kaffir-corn heads. It is with these *dithupana* that the Song of the Salt is sung. Opposite to the initiates are the celebrants who must be ceremonially clean. It is they who will lead the *Moshwene* or concert. To the left of the initiates are the parents (fathers in the *Bogwera* school). Behind the celebrants, and at some distance, are placed the widowers, while on the right of the initiates, and separated from them by a thick bush head, are the initiated who are ceremonially unclean.

The service is considered a sacred one, and after each office the elders retired to their homes to come back to the camp when the hour for the next office arrives. It consists of a continuous beating of the poles by the initiates with their *dithupana*. Should any initiate forget what he is doing, or carried away by curiosity or excitement fail in his part of the service, then his elder, standing among the parents of the others, will strike him with a rod he holds in his hands. As long as the service lasts the beating of the poles is continued. The Bakaa tribe use tortoise-shells in place of the poles, and after the ceremony is over these shells are buried in a secret place, only to be unearthed when the next ceremony comes round. During the service the Song is sung. One of the celebrants will sing a line and the initiates are then required to say "Ho-o-o," and then repeat what the celebrant said, but if he forgets to keep on with the beating of the *dithupana*, he is punished as I have said. At the close of the Song the poles are stacked like soldiers stack their rifles, to be unstacked again when the next service begins. The language of the Song is allegorical, and under various names is an exaltation of the sexual organs. In both ceremonies the object seems to be to incite the passions.

Here is a small portion of the Song of the Salt :—

<i>Shupañ kgwedi ka nakana</i> . .	Point to the moon with the little horn (the penis).
<i>Lecwai le yele bosimane</i> . .	Salt has eaten boyhood.
<i>Lecwai le tla bina kae?</i> . .	Where shall the salt dance ?
<i>Setlhako sa me se le malekana</i>	My shoe has been torn to pieces.
<i>Ke rile ke le mosimane</i> . .	When I was a boy.
<i>Ka dihela tlou..</i> . .	I served the elephant (<i>penis erectus</i>).
<i>Tlou ea gola ea mpheta</i> . .	The elephant grew and passed me.
<i>Nna lecwai ga ke ye motho</i> . .	I, salt, don't eat the person.
<i>Ke tlosa letlosho</i> . .	I take away the foreskin.
<i>A di lele diphorogotho!</i> . .	Let the <i>dithupana</i> cry !
<i>Re letile maheho (basadi)</i> . .	We are waiting for women.

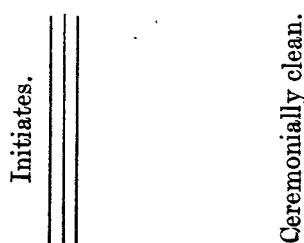
In the *Bogwera* woman is only referred to allegorically.

The women's song is :—

A lo bona cwai ya bo Rraecho? Do you see the salt (male organ) of our fathers

Plan of Camp.

Fathers.



Widowers.

The songs sung and taught to the initiates during the ceremony are distinctly obscene, and it is doubtful if any one of them is free from indecent suggestion. The practices of the barnyard are almost openly referred to, and in some cases with unmistakable language. In short, the whole atmosphere in which the initiate lives is lascivious, and the suggestions of the songs, if not their actual language, are incentives to passion. As a native whom I can trust, and one who is not a foe to his people, says : “There is nothing so filthy as the language of the songs of the circumcision rites of both sexes.” The songs of the *Bogwera* are saturated with reference to the female organ of generation, and the songs of the *Boyale* to that of the male. Purity of thought would appear to be impossible, while impurity of life is distinctly suggested, if not inculcated. All womankind is the hunting ground of the initiate, with the exception of his mother and her daughters. Concubinage and paramourship are held up as commendable, and so long as the parties are agreeable, promiscuous intercourse between the sexes is not condemned. But this licence is confined to the initiates alone ; the uncircumcised are bulls and steers, and just as castration has a modifying effect on the animal operated upon, so *Bogwera* claims to keep in bounds the sexual passions. May I say in passing that the making of eunuchs is not unknown among the Bechuana. I have it on unimpeachable authority that the great grandfather of the present chief of the Bakwena was put to death by his people for practising this cruelty on some of his people and wanting to do it on more.

It has been claimed for the circumcision ceremonies that they are schools in which are taught self-restraint, morality, reverence for elders and obedience to law. But this claim is not borne out by actual facts. Self-restraint is urged upon the novice because of the physical consequences of self-indulgence, but the initiate is given licence to do what he will from that day in which he hears his elders say : “I give you manhood, my own manhood.” This is said to them while in the ceremony, and what applies to the males applies with equal force to the females who receive their womanhood. The actual words used are “*Ke gu naea bona, bona yoá me te youó.*” “*Ke gu naea bosadi, bosadi yoá me ke youó.*” So that the initiated man is the prey of the woman, as the woman of the man. This surely disposes of the claim to the teaching of self-restraint.

With regard to morality other than sexual, they are taught that the uncircumcised are the lawless, the incorrigible, who do not conceal things, but blurt them out, who do not hide the truth, but tell it, and who actually follow things up to discover the truth of them, and truth is the “head-breaker” (*Boamarure bo thuba tlhogo. Sephatla*).

Obedience to law is not taught to the initiated, nor do the songs contain much, if anything, to encourage law-keeping. One of the *Bogwera* songs says *Molao sekhlulo, Moelwa o ea*, which is interpreted to mean : “The law has an ending, or comes to an end, if it doesn’t it can be left behind. Persistent refusal to abide by

the law conquers eventually, and constant breakings of it will wear it out." The law is evanescent, temporary. What is permanent is the tribal life. Reverence for the past is certainly inculcated ; it breathes in the system of the rites, it throbs in their ceremonies. Kings and laws come and go, but "Sechuana" is eternal. There is no teaching of law, none of the righteousness of people, nor any teaching of veneration. There are many teachings that praise wickedness, the honouring of concubinage, and one's uncle and strangers. There is much teaching regarding the cattle, and to steal, but none that holds up law as that by which communities live and prosper. In its place is reverence for antiquity, aversion to change, conformity to traditional custom, and the completeness of Sechuana manhood and womanhood as embodied in the circumcision rites. But there must be no change. As things were in the days of long ago, so they are to-day, so they must remain. They do not change and they must not be changed ; there must be no attempt to change them. It is the new people who change things. Words, too, must not be revealed, nor examined into. That which has gone has gone. The wicked one is he who tries to get behind them. A man must do as his forbears did, speak as they spoke, and speak, whatever it may be, even though it be very wrong. Nor must any question be asked of the elders or any things strange and new said to them which might reveal their ignorance. To do so is *Tshita*—that is, to ask about or speak of something too great for the younger generation. Things remain ; they don't pass away, they don't change. As the parents found them, so will the children strike against them. As the saying is : "Se beecwe kgomo se padile se sale se cwa kwa Looë," which may be interpreted to mean : "The unconquerable things have been such ever since the beginning."

Before the ceremony comes to an end the initiates are given to the chief, who accepts them for the tribe and gives them a name as a regiment, by which they are afterwards known. He emphasises the laws of the *Bogwera*, establishes what the tribe has done, and accepts them into the freedom thereof.

All that has been said of *Bogwera* may be said of the companion rite of *Boyale*, except, of course, with regard to the actual operation.

ANIMISTIC AND OTHER SPIRITUALISTIC BELIEFS OF THE BINA TRIBE, WESTERN PAPUA.

By A. P. LYONS.

BINA is the tribal name which distinguishes that branch of the Kiwai-speaking Papuans who occupy the present villages of Mawatta, Turituri, and Dirogori or Old Mawatta, as it is sometimes called. The first-named two are situated on the coast between the Binaturi and Oriomo Rivers in the western part of British New Guinea or Papua, while Dirogori occupies a site on the west bank of the Oriomo River, about seven miles from its mouth.

The ethnography of the Bina tribe is, in the main, the same as that of the Kiwai islanders, though exotic influences have, no doubt, modified some old, and introduced some new, customs.

For the benefit of those readers who may wish to compare the spiritual beliefs dealt with in this article with those of other native tribes living on both sides of, and on the islands in, Torres Strait, it will be as well to give a brief account of these alien peoples, and of the circumstances under which the Bina came in close contact with them.

In one of the Bina legends the hero, Bidirdu, actuated by curiosity to find the animal (the turtle) that produced a bone which had been dropped at his feet by a hawk, left his inland village and journeyed towards the coast. He succeeded in reaching it at a place known as Dudupatu, which is located on the New Guinea mainland opposite the island of Daru (Iaru). From there he beheld that island for the first time. While searching for the people whose footprints he had seen on the shore he heard men's voices, which seemed to issue from inside a large *buhereapoapo* (D'Albertis' creeper) vine.

With his cassowary-bone dagger he stabbed a hole in the vine, out of which stepped several men and women. These explained to him that they were the Bina people, that they lived in the vine, that the island opposite was called Iaru, that the village on it was called Waiben and was inhabited by people known as Hiamu or Hiama. Bidirdu remained with his new-found friends, who ate food in a raw state and were otherwise in a much lower state of culture than himself. He taught them to make fire and cook, to cultivate the ground and grow food. One of their women he took for his wife.

The people whom Bidirdu came amongst may have been of the same stock as the Kiwai islanders. They had small dug-out canoes with one outrigger. On the

other hand, it is reasonable to suppose that Bidirdu did not lose touch with his own kinsmen, and that some of them joined him, and that in the process of miscegenation changes were wrought in the customs and beliefs of the people with whom he became associated.

The Bina tribe continued to reside on the mainland at various points in the vicinity of Daru Island for a long time, during which the tribesmen came into close touch with the Hiamu, who were expert sailors and possessed canoes with double outriggers, in which they hunted turtle and dugong. From this intimacy they must have learned a great deal about fitting and rigging canoes for sea voyages, hunting turtle, dugong, etc., and at the same time adopted some of the Hiamu rites and beliefs connected with these pursuits—if not others as well. To some extent there was intermarriage between the two peoples, who, on the whole, appear to have remained on fairly amicable terms during most of the time they were neighbours. Eventually the Hiamu, with the exception of a few who were unable to escape, were driven out of Daru by the Bina. They are said to have fled in their canoes to the south. Those who remained behind—or the women, at any rate—were taken possession of by their captors. The Bina, as is native custom, did not enter immediately into permanent occupation of Daru Island.

Whether the Hiamu originally came from the New Guinea mainland, or from the south, I am not in a position to say definitely. However, it is a significant fact that the native name of Thursday Island is Waiben, and that of Turtle-backed Island, which lies about 60 miles to the south-west of Daru, is Yama or Iama (? Hiamu). Yama Island is the half-way stopping-place for sailing vessels journeying from Daru to Thursday Island at the present day. It can scarcely be attributed to coincidence that two islands of Torres Strait bear respectively the name of the people who are first known to have settled on Daru, as well as the name of their first settlement on that island. Either the Hiamu originally came to Daru from Waiben Island via Yama Island, or they fled from Daru to Waiben Island via Yama Island, in which latter case it may be taken that they came from the New Guinea mainland. Either way, of course, some of the people may have remained on Yama Island, and these apparently resumed friendly relations with the Bina, for almost up to the time when Government was established in Western Papua the Yama Island people made regular voyages to and from Daru, for the purpose of making gardens on that island. On one of these trips a boy was born of Yama Island parents on Daru Island. Upon attaining the age of manhood he married a Mawatta woman and lived with her at that village. When the Government came along he was one of the first Western men to join the police force; in this he remained until the middle nineties of last century, when he returned to the island of his parents, taking with him his wife and two daughters and an adopted son—the infant child of a Mawatta man still living. That boy has grown to manhood and married, and now wishes to return to the village of his father.

Dissension within the tribe led to some of the Bina people migrating farther west. Here they settled on land which was given to them by a bush tribe called Masingara, with whom they have remained on terms of amity. Three villages were originally built on the land thus acquired, but subsequently two of the communities combined, and their descendants now call the village Mawatta. The third village was, and still is, known as Turituri. Intermarriage on a small scale has taken place between the women of Masingara and kindred bush tribes and the men of both Mawatta and Turituri. This migration of the Bina took place, perhaps, not more than one hundred years ago.

The inhabitants of both Mawatta and Turituri have come in contact with other bush tribes living further to the west, as well as with the Saibai and Dauan islanders, but these relations have not been as close or as long as those of Bidirdu's tribe with the Hiamu and the Masingara.

To what extent contact with all of these foreign peoples affected the original customs and beliefs of the Bina it would be, perhaps, impossible to ascertain, but that it did to some extent may reasonably be presumed.

We will now consider the animistic beliefs of the Bina tribe, as they are said to have existed before the advent of civilizing influences. Old men of the tribe now living tell me that they believe, as their fathers believed, that the animating principle, not only of human beings but, of the lower animals, birds, trees and plants as well, is called *Niro-iopu*. In fact, some inanimate things which are intimately connected with the daily life of the Bina, such as bows, arrows, sleeping-mats, food, etc., which are prepared from material taken only from certain growing trees and plants, thought to have been originally provided for the special use and benefit of Bina men and women, retain some of the *Niro-iopu* of the parent stems, until such time as the articles cease to be useful to the person who gathered and converted the material to his own design, or until they are utterly destroyed.

Literally *niro* means "within," and *iopu* means "fruit," therefore *Niro-iopu* means "the fruit within." The word *iopu* has a much broader meaning than "fruit," however, for I have heard it applied to the inside of trees and vines from which the bark has been removed, to distinguish the vital part from the whole. The word really means the "essence," the "life-giving part," "that which sustains the life of the outer crust," "that which controls life." In other words, it has precisely the same meaning as we give to the word "soul."

The *Niro-iopu* dwells in the stomach of a man, and the Bina believe that it vacates the body occasionally during sleep, and also during sickness. It leaves the body by way of the mouth. The reason for leaving the body during sleep is in order to take counsel with the *Etengena* and *Same*, which are referred to hereafter. A dream reflects the actions of the *Niro-iopu* when it leaves the body during sleep. Great importance is therefore attached to dreams. What induces it to vacate the stomach during sickness is not clear; but a Bina tribesman will never attempt to

awaken suddenly a sleeping person, neither will he talk in a loud voice or permit noise in the vicinity of a sick person, for he believes that if the Niro-iopu was temporarily away from the body of the sleeper or the sick person it might be afraid to return, in which case the person would die. Further, he believes that prolonged absence of the Niro-iopu from the body is the real cause of sickness.

On the death of the body the Niro-iopu proceeds to Adiri, or the after-world of the Bina, which is situated in the West where the sun goes down, from which it never returns to earth. It is not necessary to give a lengthy account of Adiri, as that, I understand, has already been done by a much more capable investigator, namely, Dr. Gunnar Landtman, in an article on the Mawatta Kiwai legend of Sido.¹

From the above it will be seen that the Niro-iopu may not really be inside the stomach of a sick man at the time of his death, though possibly it will be in the close vicinity of the body.

The Niro-iopu of a person controls his feelings, conceptions and affections. A Bina tribesman will express grief by saying that "his belly is sore." Similarly, he will "think along his belly." If at a distance from his relatives and friends, and they are thinking or talking about him, his Niro-iopu will make known that fact by causing him to sneeze, after which he will call aloud the name of his *Gn* or totem-group. This may be accepted as a proof that Niro-iopu are considered to be omniscient.

No one fears a Niro-iopu, either of the living or of the dead, for it is believed to be incapable of doing evil, though, as we shall see later on, it will accept evil advice from the Etengena.

The Bina conception of Adiri is that it is a land similar to this earth, though much fairer, where the Niro-iopu lead the same sort of life and eat the same food as they do in the land of the living. The same birds, animals, trees and plants are to be found there, though they are much more plentiful than here. In seeking to ascertain whether the Niro-iopu of these earthly organisms pass to Adiri at death, some old tribesmen said that they do, others stated that they did not know, but no one said that they did not. Collateral evidence to support the assertion that they do may be had in the Bina burial customs. A dead man is wrapped in the mat he used in life, and on or near the grave are placed his bow, arrows, satchel, and some food. It is not thought that the material itself of these articles accompanies the Niro-iopu of the deceased to Adiri, but it is believed that their Niro-iopu do.² There can be little room, then, for doubting that it is a belief that Niro-iopu of birds, plants, animals and certain inanimate things, at death, pass to Adiri.

Who causes Niro-iopu to enter the embryo of a human being, or how it enters, is unexplained by Bina tribesmen. In a vague sort of way they connect it with

¹ [“The Folk-tales of the Kiwai Papuans,” *Acta Soc. Scientiarum Fennicæ*, xlvi, 1917, pp. 95–119. Dr. Landtman also refers to other fabulous beings mentioned by Mr. Lyons.—ED.]

² A similar belief is to be found amongst other tribes in Western Papua.

the physical act of procreation, which is attributed to the male. On the other hand, they cannot explain why sexual congress, which begins at an early age, is sometimes resultless, and is resultful only after protracted coition. The fact that they believe that the physical body is produced in the natural way would, I feel sure, have led the old philosophers of the tribe to account in some way for infertility, despite incontinence ; therefore I am inclined to think that it has only been during the march of civilization that tribesmen have discarded an old belief in favour of more Christian ideas, and that it is now lost. In pursuing investigations on this subject amongst many tribes in Western Papua, I have found that, generally speaking, the women know more about it than the men.

Concomitant with the belief that a Niro-iopu finds a habitat in the stomach of a human being, there is another one, that the body is the abode of an evil spirit which is called *Oboro*. Every animal and bird possesses an *Oboro*. On the other hand, I can find no evidence of a belief that plants and trees, of themselves, possess *Oboro*. As an *Oboro* this evil aura or emanation of the body is not visible to the naked eye, though its presence may be suspected if a strange and unaccountable noise is heard in a lonely spot, or in the vicinity of the burial-place of the dead. These evil spirits are believed to be particularly active during the hours of darkness. An *Oboro* can leave and return to the body at will, and without endangering the health of the person. Though it is said that if an *Oboro* touched a living being the latter would at least become sick, if not die, yet the Bina conception of the evil it is capable of working is so vague and indefinite as to preclude the possibility of my giving precise information on the subject. If a person who suffered from a cardiac disease was, or thought he was, touched by an *Oboro*, and fatal results supervened, his death would be attributed solely to the cause which brought about the shock.

Fires are always kept burning in the house, or near the place where a Bina tribesman sleeps, for it is believed that fire will scare *Oboro* away.

As a phantom, called *Urio*, and a shadow, called *Uriana*, an *Oboro* may be seen by the living. It may be remarked that the shadow of a human being, a bird, or an animal, is called *Uriana* ; the shadow of a tree or of an inanimate object is called *Iri*. Under the manifestation of an *Urio* an *Oboro* of a living, as well as of a dead, person may be seen. One of my informants related that one day he proceeded to his garden, leaving his wife in the village busying herself with domestic affairs. While in the garden he saw what he believed to be his wife, standing at a little distance from him. Much surprised, he asked her why she had followed him. Receiving no answer, he approached her, when, to his amazement and alarm, she suddenly vanished. Hastily he returned to the village, where he found his wife as he had left her. He enquired of her whether she had been to the garden, and she replied that she had not, at the same time looking surprised at the question. "Then I have seen your *Urio*," her husband said. A few days later he left the village on

a fishing expedition. Returning the following day, he found his wife sick. Three days later she died.

Not a few instances are on record of the Urio of deceased persons having been seen, but there is no record of the Urio of either a living or a deceased person actually having done harm directly to the person who saw it. The only consequence was a severe fright at the sight of it. However, like the Oboro, it is thought that if an Urio touched a person, that person would become sick, and perhaps die.

As seen above, the apparition (Urio) of a living person presages that person's death. On the other hand, no special significance is attached to the appearance of the ghost of a dead man, beyond what has already been said.

An Oboro is said to be most malignant immediately after the death of the body, close to which it hovers for about two or three months. A widow is the particular object of its malignity, and for this reason she will wear a piece of hair taken from her dead husband, suspended by a piece of bark or cord from her neck, and also other signs of mourning, in order to placate his Oboro. His blood relatives, too, adopt mourning for the same purpose. To cure the "sore belly," or grief, much food is consumed at two feasts—one held immediately after the death, and the other about two or three months later, when usually the mourning is discarded. At this second feast the skull of the deceased plays an important part; subsequently it is deposited in the branches of a large fig or other tree, or in some other secret place away from the vicinity of the living. The remainder of the skeleton is buried in the ground. Afterwards less fear is entertained of the Oboro. This last feast, and the disposal of the skull, is really a "laying of the ghost."

Ficus and other large trees are generally respected by the Bina tribesmen. They will not cut them down, for they may be the haunt of some Oboro or other evil spirit. They do not believe that the trees themselves contain evil spirits, but that they are merely the resting-place of those of human beings.

There seems to be no grounds for supposing that it is or was a belief that an Oboro, in any manifestation whatever, proceeds to Adiri. On the contrary, it would seem as if Oboro are believed to be ever lurking in the bush or near the precincts of villages, and are likely to be encountered wherever tribesmen go. Except those of the very recent dead, Oboro are not greatly feared by men, but it is otherwise with women and children. Partly for dispelling this fear in the women, and partly, I suspect, for the purpose of supporting the fiction that certain elderly men of the tribe exercise some influence over the evil spirits, it was the custom of old to perform throughout the south-east (*Uro*) season what was known as the *Horiomu* ceremony. The old and elderly men alone made arrangements for, and took part in, this ceremony, the theme of which was to lay the Oboro of the dead generally. The greatest secrecy was preserved in connection with it. At a lonely spot some distance from the village an area was cleared and encircled by a high fence of leaves, in which was left one opening to permit entrance and exit to and from the enclosure. Some time

was occupied by the *dramatis personæ* in preparing masks and leaf dresses for the ceremony. On the arranged day the women were summoned to bring food for the Oboro, which they deposited outside the enclosure, near which they sat. Presently the performers, disguised in masks and dresses, would silently emerge from the enclosed area and commence a mute performance, supposedly mimetic of spirits. A confederate would point to this or that spirit as the Oboro of the deceased husband of some woman or other who was present, telling her that it was about to depart finally from its usual haunts, and suggesting that she should provide food for the journey. Thereupon the woman would commence to wail in token of her regret that even the Oboro of her deceased spouse was leaving her. Finally she would shoulder the food she had brought, and, turning her back on the spiritual body of her late husband, would be relieved by him of her load. She then walked away. When all the women had acted similarly, the performers would share out the spoils inside the enclosure. This performance was repeated many times during the south-east season. The same men did not necessarily take part in each, nor were the same Oboro represented. It was *sabi* (forbidden) that a man should represent the Oboro of a deceased clansman. He could only represent the spirit of a man who was in no way related to him. There is little doubt but that the women believed that the bogus spirits were genuine Oboro, though there is no evidence that the men who took part in an Horiomu ceremony thought so. I fancy they regarded their performance in the same way as a sorcerer does his.

We will now give some attention to other spiritual beings that are familiar with the Bina tribe. The first in importance, perhaps, are the *Etengena* and the *Same*. The latter, I think, may be regarded as tutelary spirits, for they are credited with exercising an influence only for good on Niro-iopu of the living. *Etengena*, on the other hand, though not harmful in themselves, have a reputation for teaching the Niro-iopu of tribesmen the arts of fraud and deceit, as well as what can be employed to injure others. As one of my informants put it, " *Etengena* teach man altogether bad tricks." They are credited with acquainting Niro-iopu with what snakes are poisonous, and how they can be employed to harm a personal enemy; also what plants and fruits are noxious. *Etengena* appear as men in association with Niro-iopu during dreams. As no special Niro-iopu have a monopoly of the advice of *Etengena*, they cannot be said to be wholly evil if they teach the living what is evil. *Etengena* secrete themselves in swamps, hollow trees and in the ground, and move about at night only. Nobody is particularly afraid of them, though, if a noise is made inside a hollow log, the *Etengena* will not be disturbed. It is related that a man who lived a long time ago was made aware in a dream, by an *Etengena*, that a large *Ficus* tree which formerly stood on the site of the present Residency at Daru was the abode of a *Buhere-buhere*—a female monster. This information the man kept to himself until he had made use of it for the purpose of bringing about the death of a personal enemy—supposedly at the hands of the *Buhere-buhere*.

The Same are benevolent spirits which advise the Niro-iopu on all things for the welfare of the body. Their special consideration, however, is devoted to the gardens and crops. They are capable of influencing a man in the choice of land for garden purposes ; what he should plant in it ; what large trees should not be cut down ; when he should sow and reap his crops ; what plants and animals are good for food, and what places should be avoided. Same appear in dreams to Niro-iopu, in the form of men. They usually keep in the bush by day, wandering about after darkness sets in. It is related of a Mawatta man named Seriba, who, though now dead, was personally known to many men living at the present time, that one day, when working in his garden, a strange man appeared. Being asked by Seriba who he was, the stranger stated that he was a Same, and that he had come to show Seriba how to make a garden, and what crops to sow in it. After having done this, he suddenly disappeared. Seriba reported the occurrence when he returned to his village. No one has the least fear of Same.

From the decapitated body of a slain enemy there emanates a fiery spirit which is called an *Utumo*. It is a manifestation of a Urio, but takes the form of the headless trunk, from the neck of which two horn-shaped beams of light are thrown off. It is thought to be incapable of moving away from the body, for, as my informants tell me, it cannot see, having no head and eyes. This spirit remains in the vicinity of the body until the flesh has decomposed. It is greatly feared, for it is credited with being able to kill anyone it seizes. One tribesman related having seen one some years ago when he was a youth, and his description concides with the above.

Both in the sea and on the land certain evil monsters are thought to exist. In the sea, as well as in tidal rivers and streams, is to be met an evil creature which is credited with the power of transfiguration, being able to transform itself into a pig, a snake or a crocodile at will. It is called *Ebihari*. In any form it is capable of going on the land, but its particular realm is the water. Its presence is indicated by bubbles arising from the bottom of the sea, or when muddy patches are seen in the water. It is capable of capsizing canoes and devouring those of the occupants who do not succeed in making their escape. Somehow, I do not think that the Ebihari is greatly feared by the Bina tribesmen, for they have no hesitancy in jumping from a vessel into the sea in order to capture a turtle, and in plunging in for a swim ; but whether they would do so where there were bubbles or muddy patches is a matter for the particular individual to determine. An Ebihari is credited with having chased some Iasa (Kiawai) men who were in a canoe, but they managed to escape.

Of land monsters the *Hawai-e-abere* is perhaps the most fearsome. It is a creature with the body of a man, and having long thin arms and legs with crocodile-like claws for hands and feet. The head is that of a man with the snout of a pig, out of which two long, curved knife-edged tusks grow. He lives sometimes in trees and sometimes in the ground by day, and walks about by night, seeking whomsoever he can to devour. He will eat human beings, and pigs and wallabies as well. *Hawai-e-abere*

are to be found on Daru, and on the islands of the Fly River estuary, and are said to be met with on the mainland. It is related that when the Hiamu lived on the island of Daru a small boy was devoured by one of these creatures. The boy, it seems, began to cry one night. No one could pacify him. His parents went to sleep. Next morning when they awoke, the boy was missing. Noticing some blood-stains on the ground near by, they traced them to a big hole in the ground at a place on Daru known as Iho. No further trace of the boy was found, so his parents concluded that he had been taken by a Hawai-e-abere. The Sumai people of Kiwai Island relate that many years ago some of their men killed a Hawai-e-abere in a sago swamp, afterwards bringing back to the village the skull and tusks of the monster. These remained in the village for a long time.

Another land monster is called *Orio-goruhu* (literally, one who eats food in a raw state). This creature is of the female sex, having big tusks and "ears as big as blankets," as my informants told me. She seeks her victims chiefly amongst the women of the tribe, whom she devours after tearing them to pieces. She makes her home amongst the rocks in the hills on the islands of Torres Strait, as well as in the caverns of the ridges to be found between the sea coast and the Fly River. She moves about quickly at night and sleeps during the day. I was informed that some years ago it was usual for old tribesmen to warn young men who were proceeding to work in the Torres Strait fisheries "to look out along *Orio-goruhu*, plenty he stop along hills on the Queensland Islands" (of Torres Strait). It is quite likely that this monster originated with the Hiamu or some other tribe from the south.

Buhere-buhere is the name applied to another female monster. She too has claws on her hands, and large knife-like tusks. She looks for victims amongst children particularly, as it is believed that she is a disappointed female who has never had any of her own. She lives in large fig-trees. No special fear is entertained of her amongst adults, but children fear her, perhaps because their mothers threaten to give them to the *Buhere-buhere* when they are naughty.

There is a mythical being called *Waime* that the Bina speak of in connection with crabs, which, by the way, form one of their principal articles of food. The duty of catching crabs is entirely that of the women, and men consider it derogatory to do so. Properly speaking, *Waime* is a creation of the Hiamu. Of him it is related that a long time ago an Hiamu woman went to Bobo (Bristow Island), which is alongside Daru, to hunt for crabs. She saw a large one run into a hole, so began to try and dig it out. She continued digging until a large excavation was made in the ground with a huge mound of earth beside it, but failed to find the crab. Thereupon she returned to her home on Daru. That same night the crab, as a man, appeared to her in a dream, and told her that his name was *Waime*, and that he was really not a crab but a man. He informed her that if her men would go to the excavation she had made they would find him there in the form of a big stone ; and further, if they removed the stone to Daru, ever afterwards she would catch plenty of crabs. She

did as she was bid, and the stone in due course was removed to a place on Daru called Iho, where it remained for many years.

Wauwa and his wife are two mysterious beings that live on the hill at Mabadauan, near the mouth of the Pahoturi River. They figure in the tale of Sido which has been narrated by Dr. Landtman.

Like all other tribesmen of Western Papua, the Bina are classed as head-hunters, although civilized tribes have long been forced to discontinue the practice. Before concluding this article I should like to suggest a possible origin of the custom of decapitating a slain enemy and carrying off the head to the village of the captors, for I believe that it arose out of the animistic beliefs of the people. No explanation for the custom, of course, can be had from the tribesmen, but, taking into consideration the reason for the Bina custom of ceremonially dealing with the skull of a deceased person in order to lay the ghost (which custom is by no means peculiar to that tribe in the west end of Papua) and their belief in regard to Utumo, I think it is probable that the originators of the custom reasoned that the Oboro of a slain enemy would naturally possess an intensified feeling of hatred towards the slayer, and would therefore be more malignant; but by beheading the body, its Oboro too became headless and unable to see, thus reducing its potency for taking revenge. As I am not acquainted with the views of authorities on this subject, I cannot say whether this hypothesis is new.

NOTES ON SOME ARCHÆOLOGICAL REMAINS IN THE SOCIETY
AND AUSTRAL ISLANDS.

[WITH PLATES XVIII-XXIV.]

By S. AND K. ROUTLEDGE.

THE following are notes of a cruise in French Oceania undertaken with the object of finding traces of culture analogous to that of Easter Island. It was thought best to utilize the time at our disposal in each island, which has so far been strictly limited, in gaining as wide a knowledge as possible of existing remains rather than in making an exhaustive examination of any particular site. Difficulties of exact record have been much increased by the fact that the remains themselves are not only in ruins, but also largely hidden by tropical vegetation. Sketch-plans are therefore given with reserve; measurements have been taped, and are given to the nearest $\frac{1}{2}$ ft., but an allowance in some cases of 5 to 10 per cent. should be made for error. Compass bearings are to be considered approximate unless otherwise stated.

MOOREA.

The expedition arrived at Tahiti on July 6th, 1921. Delay occurred before a vessel could be found in which to proceed, and between two or three weeks of the time were spent in the neighbouring island of Moorea; we are much indebted to ex-Queen Marau for making known to us localities of interest in that place.

Marae Horora (or *Matati*)¹ stands about 400 yards from the east coast, at the entrance to a valley which runs up among the mountains and abounds with terraces, evidently used for cultivation by a much larger population than that which now exists; there are also other remains in the vicinity of the marae itself. The main structure is covered by a network of tree trunks (which prevented photography), but all lighter growth was removed. The form was found to be oblong and of that known as "truncated pyramid" (Fig. 3). It appears to have risen in three steps or terraces, two of which, on the western side, are clearly visible, each having a width of 2 ft. 3 in. The total height is 11 ft. The building is constructed mainly of unhewn stones, the larger of which average about 100 lbs. in weight; few blocks of coral are employed, but small coral débris was found in a position suggesting that it had been used to strew the terraces or for other ornamental effect. In two places

¹ The latter name was given locally, the former we are informed is its correct designation.

NOTE.—The cost of the blocks for the illustration of this paper has been defrayed by the authors, who retain the copyright of the illustrations.

on the western side there are traces of a facing formed of cone-shaped pieces of volcanic rock weighing about 20 lbs. each. A careful examination showed that, contrary to local information, the structure was solid and did not contain any cavity.

This "pyramidal" edifice forms the western end of a rectangular enclosure surrounded by a wall about 3 ft. 6 in. in height. On the north side of the enclosure

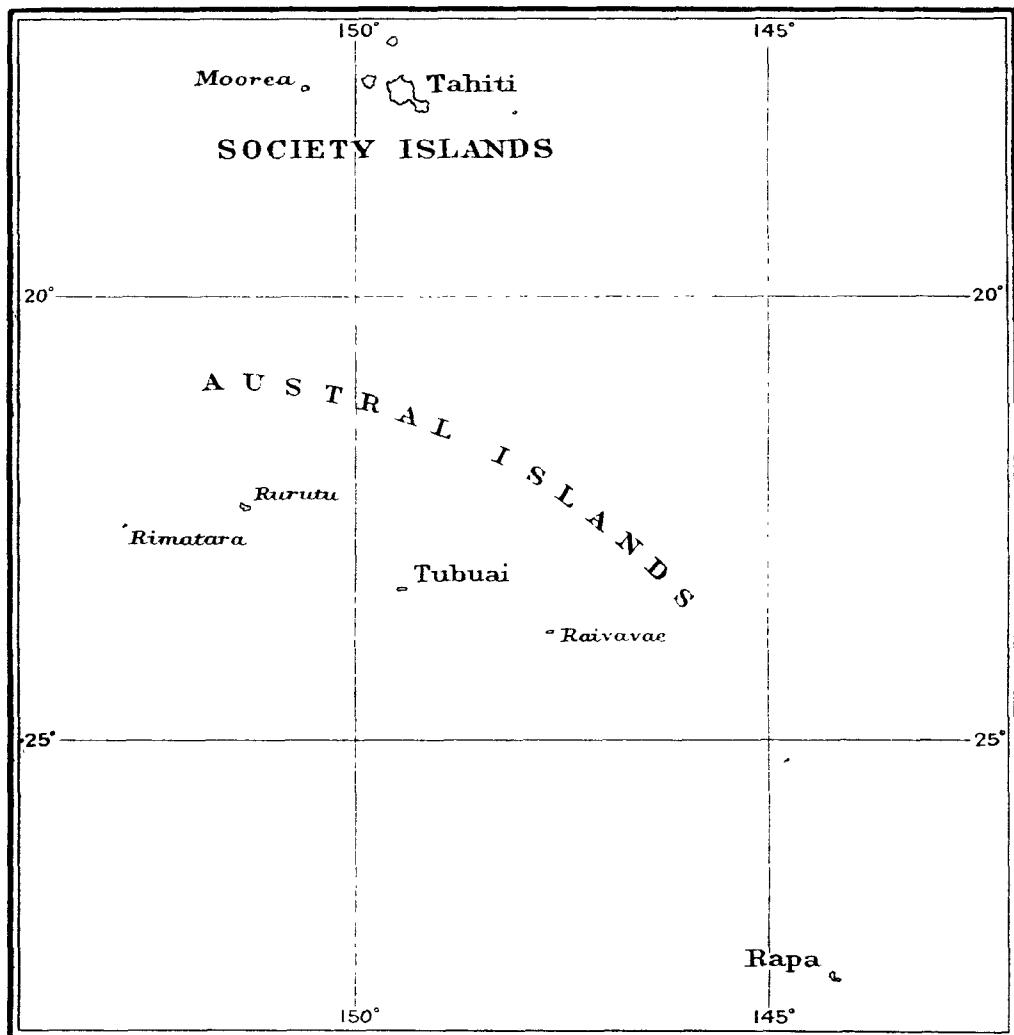


FIG. 1.—THE AUSTRAL ISLANDS AND PART OF THE SOCIETY GROUP.

this wall is in good repair, and it shows a foundation of stone blocks and a facing of cone-shaped stones similar to those on the main building; in one place seven courses of these are visible: they are remarkably regular in size and shape, and the general appearance of the facing is very effective (Pl. XXIII, A).

The centre of the enclosure was covered with thick brushwood and not examined: no remains were obvious.

Marae Umarea (Fig. 4 and Pl. XVIII, A) stands on the extreme edge of a small promontory, about half a mile to the south of Marae Horora, but has been largely wrecked, apparently by some exceptional action of the sea, such as hurricane or tidal wave. The body of young King Pomare III was originally buried here. The main edifice is roughly semi-lunar in shape, the base on the landward side running in a straight line, and that on the seaward following the curvature of the coast. The building is composed of

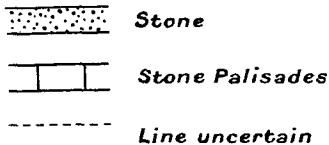


FIG. 2.—KEY TO THE LINE-DRAWINGS.

large blocks of coral, one measuring 2 ft. 6 in. × 2 ft. × 10 in., but at regular intervals, averaging about 4 ft., a transverse septum has been introduced made of rectangular pieces of stone. Traces of terraces are still visible, and on both sides there has been a facing of cone-shaped stones similar to those at Horora ; on the seaward aspect some of these still remain in place, while others lie at the foot embedded in coral rock which has grown up around them. The greatest height of the structure is now about 12 ft.

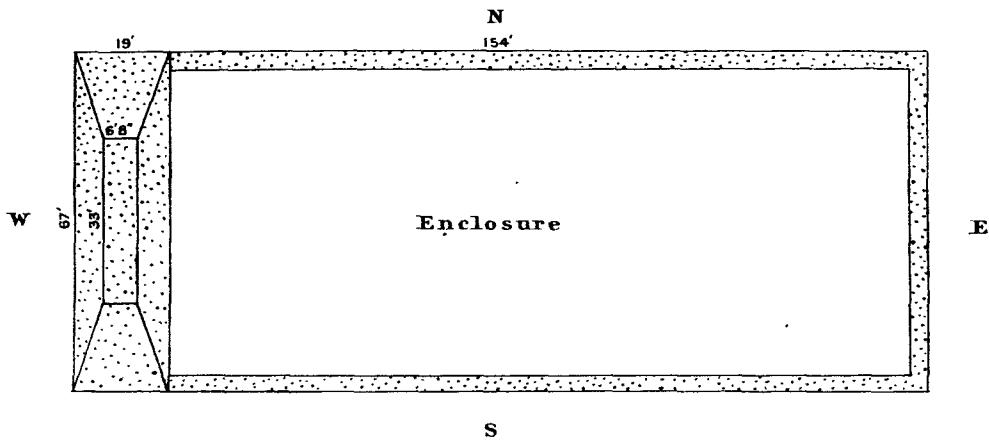


FIG. 3.—MARAЕ HORORA, MOOREA.

Foundations were found of the walls of a large enclosure of which the edifice described has formed the eastern end. Part of the southern boundary wall exists to-day, in the form of an embankment, holding back the sea. It has been breached near the marae, and the landward end of the enclosure turned into a swamp, which is scattered with débris from the building. The corner of the north and west walls is, however, clear, and both walls can be traced for the greater part of their extent. The foundations consist of parallel lines of selected stone blocks, the interval between which is usually packed with rough coral ; the northern wall has had an extreme

width of 4 ft. 9 in., and the western of as much as 6 ft. 9 in. Cone-shaped stones are found *in situ* on the west wall and scattered elsewhere in the neighbourhood of the enclosure.

It is of particular interest to compare these two marae with the descriptions given by Cook and Banks of the great Marae of Tooarai¹ at Mahiaatea in Tahiti, and with the drawing of the same (Pl. XIX). It was, we learn, an oblong pyramid with a base 267 ft. \times 71 ft., consisting of eleven steps composed of squared coal stones and "blue pebbles." The building formed, it is stated, one side of a court or square, the whole being walled in.² This marae is now a ruin, having been utilized in comparatively recent times as a source of material for burning lime and also owing to the encroachment of the sea. A few feet, however, of the original structure were found

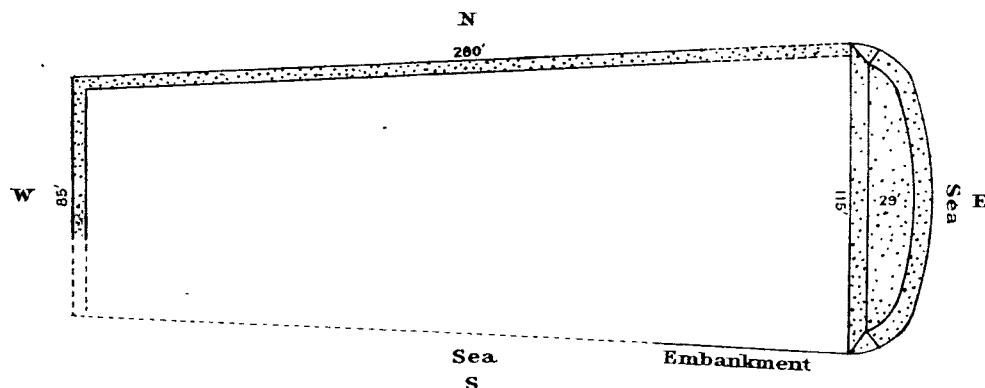


FIG. 4.—MARE UMAREA, MOOREA.

on the seaward side and exhibit the foundations, on the top of which are rows of cone-shaped stones bearing a striking resemblance to those of the marae of Moorea (Pl. XVIII, B). It is thus satisfactory to find that we have on the neighbouring island at least one marae in good condition, that of Horora, which represents, on a small scale, the more striking features of the most famous structure in Polynesia.

Two other marae were visited on the west coast of Moorea, both known by the name of Nurua. The most marked feature of the smaller, which is also the more northerly, were two stones of columnar type, about 2 ft. in height, which stood at a short distance from one another in front of the northern base of the structure; they are stated to have been the seat of the chiefs connected with the marae. Stones of about the same height, but more slab-like in form, adjoin the base of the neighbouring marae of the same name, where is also a large horizontal stone known as the place

¹ Madame Marau informs us that this is its correct name, the usual appellation—Mahiaatea—being that of the locality.

² The fence shown in the illustration by no means fulfils this description: it is apparently either additional to the wall, or more probably an invention of the artist in redrawing the picture.

of sacrifice, certain depressions in which are said to have been used to contain the eyes of the victims.

Two *Tii*, or images, were seen in Moorea, both standing more or less *in situ*, but in each case the figure was small and roughly carved. One, locally known as "Atarainoa," was shown near the house of its owner, among a number of stones said to have formed a marae. The arms are held in front of the body with the hands level; there are no legs; the height above ground is 1 ft. 6 in. The other *Tii*, whose name is "Omito," is 2 ft. 6 in. in height. It was found at the corner of certain foundations known as Marae Tafano situated in a ravine full of remains of former cultivation. The foundations appeared to be in the form of terraces or enclosures, and in no way resembled the other marae seen. Nothing observed in Moorea in any way recalled Easter Island.

AUSTRAL ISLANDS.

TUBUAI.

Tahiti was left on August 24th in the 150-ton schooner "Vaite." Orders were given to sail for Rimatara, the most western of the four Austral Islands, with the intention of proceeding through them in an easterly direction. Owing, however, to the vagaries of Polynesian navigation, the land actually made turned out, to the general surprise, to be Tubuai, the third member of the group, a slight error of about 200 miles in a distance of some 300 miles. Accepting fate, we lay in the lagoon at Tubuai from August 29th to September 3rd.

The island is five miles in length, with a central mountainous region and cultivated coastal belt. All over this low ground, upstanding stones are met, which are obviously the survivors of destroyed structures. They are mostly insignificant, but in four cases marae were found of superior size and in better preservation. These are all of the same character, being composed of large stone slabs, which are set up as palisades so as to form three sides of a square; the fourth side, generally that to the south, is always left open; in certain cases gaps were noted also at the sides, which may have been arranged entrances.

The stones used are basaltic, the bulk resembling tombstones, but the upper extremity inclines to be pointed, while the lower, that set into the ground, is thick and heavy; the form appears to have been brought about by the bevelling effect of water acting on horizontal beds. That surface of a stone which is directed towards the enclosure is usually flat, that away from it tends to be convex from side to side. The slabs are set up in fairly close approximation, but there is no attempt to dress the vertical edges, or to intersperse smaller fragments between them. They vary much in height, ranging from 2 ft. to 7 ft. or 8 ft., while in exceptional cases they are still taller. The biggest stones are always placed opposite to that side which is left open. Pavement is found in the best preserved instances and was probably

present in all. Outlying stones suggested that the rectangle may originally have formed only one, although the principal, part of a larger design. The structures appear to have no local names.

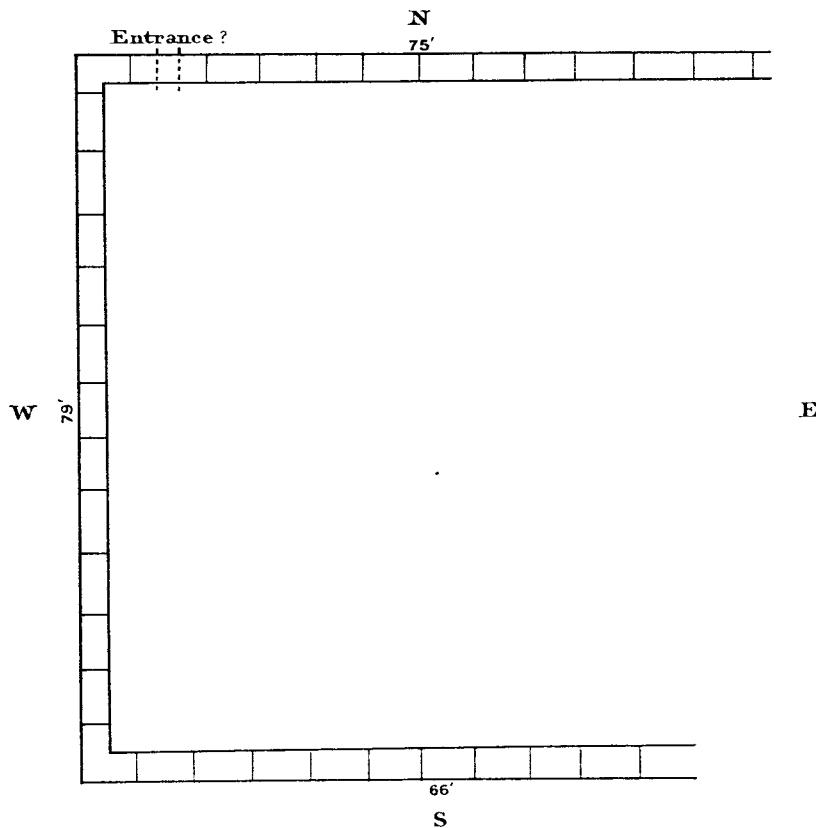


FIG. 5.—THE “MARAЕ,” TUBUAI.

The “*Marae*” (Fig. 5 and Pl. XX, A) lies within 20 yards of the eastern shore; the interior is utilized as a homestead. The stones number some sixty-seven, of which about fifty still remain upright. The range of heights may be gathered from the following, which are those of the ten stones forming the western half of the northern side:—

- 2 ft. 1 in. × 2 ft. 9 in. × 0 ft. 9 in. broken.
- 2 ft. 7 in. × 2 ft. 0 in. × 0 ft. 11 in. vertical.
- 2 ft. 9 in. × 2 ft. 11 in. × 0 ft. 7 in. vertical.
- 5 ft. 9 in. × 3 ft. 2 in. × 0 ft. 7 in. horizontal.
- 3 ft. 5 in. × 2 ft. 9 in. × 0 ft. 11 in. vertical.
- 2 ft. 9 in. × 1 ft. 10 in. × 0 ft. 6 in. vertical.
- 7 ft. 4 in. × 2 ft. 8 in. × — horizontal.
- 5 ft. 6 in. × 1 ft. 5 in. × 1 ft. 2 in. vertical.
- 8 ft. 2 in. × 4 ft. 9 in. × — horizontal.
- 6 ft. 7 in. × 4 ft. 3 in. × — horizontal.

The largest stones, as usual, face the open side, the tallest being 10 ft. \times 3 ft. 4 in. \times 1 ft. No pavement was found. An outlying stone 4 ft. 8 in. in length lies on the south side, 19 ft. from the rectangle.

Marae at Harii (Fig. 6 and Pl. XX. B) stands on rising ground amid tropical growth, some 200 yards from the eastern shore. It was visited three times and the

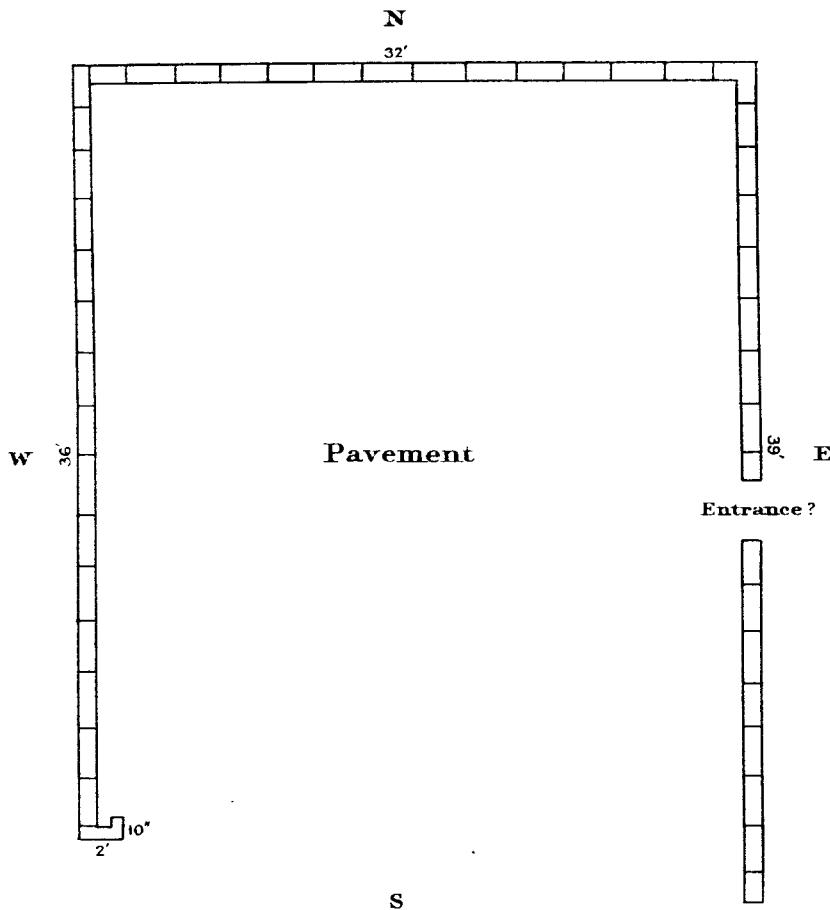


FIG. 6.—MARAЕ AT HARII, TUBUAL.

rectangle personally cleared. It consists of some thirty-six stones, of which about twenty-five are standing. Two slabs are placed at the south-west corner so as to make a small bay (see sketch-plan); it was stated by the proprietor that they had once formed part of a small area partitioned off from the main enclosure. Two small stones, about 1 ft. 6 in. in height, stand vertically at a little distance from one another, well within the enclosure.

The stones of the palisade range from 2 ft. 7 in. upwards. The longest, now horizontal, was the largest observed on the island; it has stood in the middle of the north side and measures 14 ft. \times 3 ft. \times 10 in. The previous authority stated that it had fallen about thirty years ago, within his own memory, when a Frenchman

had removed the stones at its base for building purpose, doing at the same time much other damage to the marae. The base of this stone appeared to be wrought on the three sides visible, the only instance of such work encountered.

The whole is said to have been covered with pavement, a considerable amount of which is still intact ; it is made of slabs of basalt of irregular shape, averaging 18 in. square, pieced together with fair neatness. The pavement has extended on the north and east sides some 6 ft. beyond the palisade, the west side could not be examined.

Certain outlying stones suggested the possibility of an avenue of approach. Three others at a distance of some thirty yards from the south end of the marae could not be accounted for.

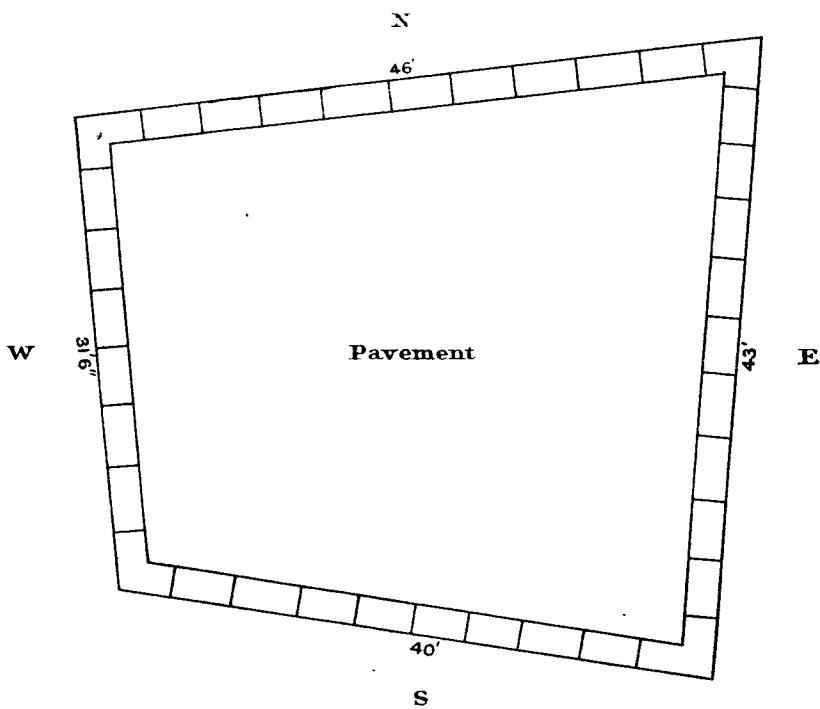


FIG. 7.—MARAÉ PIRÁÉ, RURUTU.

RURUTU.

Rurutu, which was next visited, resembles Tubuai, save that the coast is more precipitous ; the reef is too close to the shore to allow of anchorage, so the "Vaite" lay off the island from September 5th to 8th. On landing, remains were seen of at least ten marae of a character allied to those of Tubuai, but with no stones above 6 ft. in height. The majority were so destroyed that only in one or two cases could the original form be satisfactorily determined.

Marae Piraé (Fig. 7) is situated in a wood about 150 yards from the north or north-west coast. The stones are falling in all directions, but mainly from natural

causes ; they are of basalt interspersed with cut coral ; one of the highest still in place is 4 ft. above ground. The palisade here forms four sides of a square instead of three as at Tubuai, a pavement seems to have covered the whole of the interior and extends on the north and west sides some 20 yards beyond the rectangle. Various vertical stones on the north aspect appear to indicate a neighbouring enclosure.

Another marae was noticed on the ride back to the ship, but unfortunately too late to be examined. It was a rectangle perhaps 40 ft. by 30 ft., paved throughout, and having in the interior a sunken space lined and paved, measuring possibly 14 ft. \times 10 ft. \times 3 ft. This is the only case where the last feature was observed.

RIMATARA.

Rimatara is a low circular island only some two or three miles in diameter and with no anchorage ; we landed on September 9th, and on September 10th rode across it with guides. Remains of three marae were seen and others were said to exist.

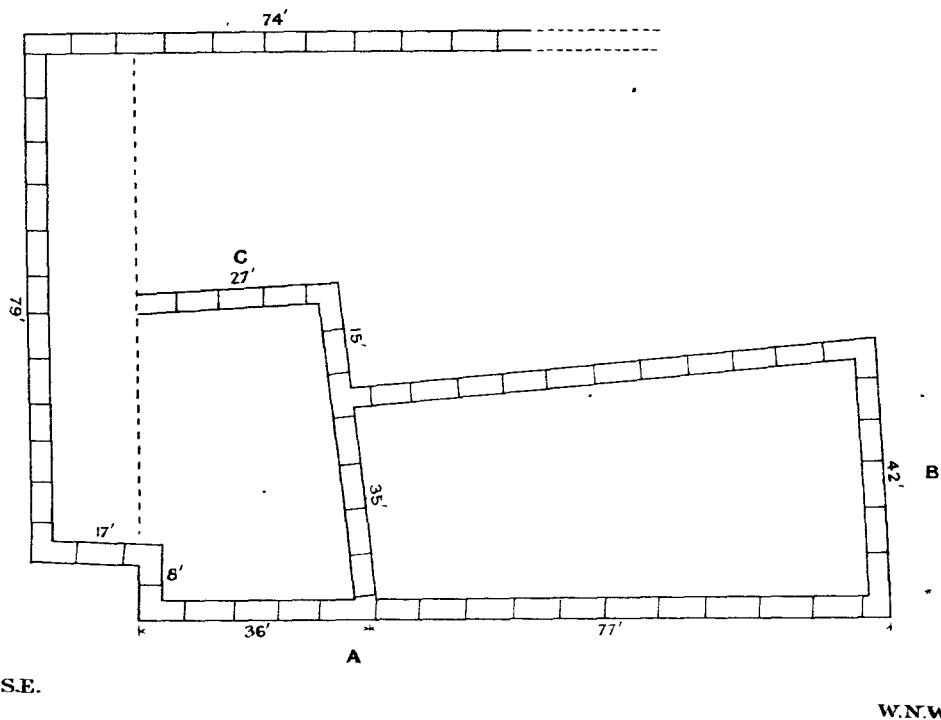


FIG. 8.—MARE MAUENUA, RIMATARA.

Two hours were spent in examining *Marae Mauenua* (Fig. 8), which stands on an old coral flat some fifty yards from high-water mark and lightly covered with sand and vegetable soil. It consists of coral slabs, many of which have been fractured or converted into lime, by the practice of heaping against them fallen débris from the adjacent coconut trees and then setting it alight ; it would, no doubt, be possible with time and clearance to trace their bases. The slabs have been set up in palisades

as in Tubuai and Rurutu, but here the remains were found actually extending beyond the simple rectangle in a manner which is now only indicated in the other islands. The sketch represents with fair accuracy those lines which could definitely be traced ; in some (noticeably in A, B) the stones have been set in close proximity, in others it is possible that they were placed at intervals, while yet others may have been isolated. The majority did not appear to exceed 2 or 3 ft. in height : the largest were in the neighbourhood of line C, where the fallen portion of one, which had its base still in the ground, measured 6 ft. 8 in. \times 2 ft. 6 in. \times 1 ft. In this part of the marae there were also found traces of pavement.

Tapa is still being made in Rimatara for domestic purposes.

RAIVAVAE.

Retracing our steps to the eastward, we reached Raivavae on September 15th, and lay inside the fringing reef till September 22nd. The island is twelve miles long, high, and with a nearly continuous coastal belt ; the remains here are very extensive and interesting : various marae were found and five specially studied.

The main characteristics were the same as elsewhere in the group, but here the main court instead of being roughly square is definitely oblong, running approximately east and west. All sides were enclosed, and entrance ways were found, such as had been guessed at elsewhere. In all cases, subsidiary erections were found adjoining to, or in the immediate neighbourhood of, the main one. In four out of the five cases one of these extensions took the form of a small enclosure adjacent to, and at one end of, the north wall of the main rectangle.¹ In two marae (Figs. 10 and 11) there were further paved courts beyond this small area, leading up to certain stone foundations, said to be those of a house devoted to the great man of the place. In one instance (Fig. 12) small spaces were found walled off on either side of the entrance to the main enclosure, which were said to be for the sentinels on guard, and a similar arrangement was noted in another marae.

Pavements were general, but only in one case was anything beyond this found within the enclosures ; the exception was a monolith, standing in the centre of a main court and said to have formed the dividing line between persons of greater or less importance (Fig. 11²).

Two avenues of approach were marked by slabs at near intervals (Figs. 10 and 11, and Pl. XXI, B). No wrought slabs were found, but the finish of the structures was definitely superior to that elsewhere : in particular, the palisades were supplemented by a low continuous curb formed of wrought bars of red tuff, about 2 ft. to 3 ft. in length, 9 in. in width and the same in depth.

¹ In the fifth case its position, near the west end of the main court, may have been determined by the lie of the ground, a steep hill-side.

² This monolith, accidentally omitted from the plan, stood exactly in the centre of enclosure A.

Marae Raau (Fig. 9) is a small and unpretentious structure about 200 yards from the north coast. The main enclosure has 44 stones in all, ranging from 2 ft. 7 in. to 7 ft. 2 in.: it is chiefly interesting as showing the apparent necessity of the secondary enclosure. There were other stones in the vicinity.

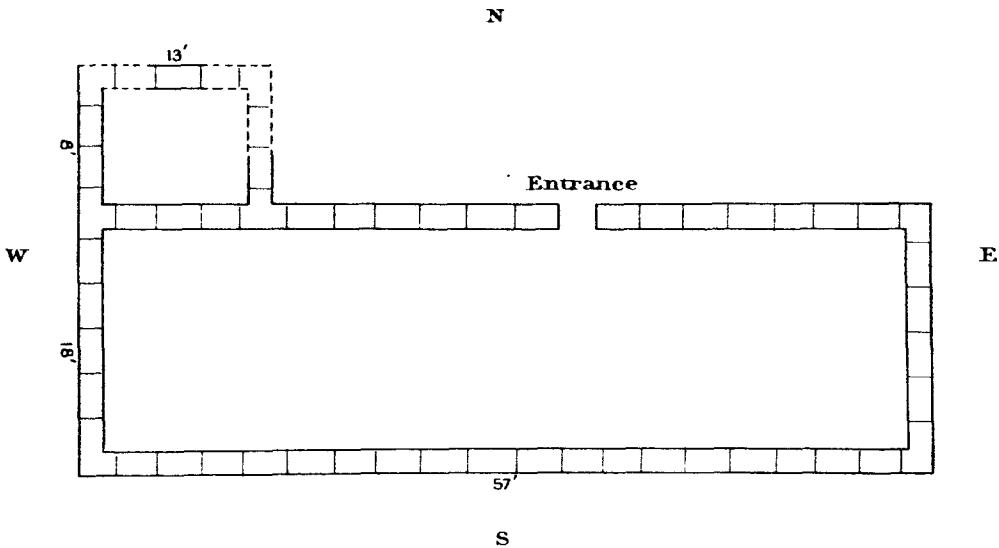


FIG. 9.—MARAЕ RAAU, RAIAVAЕ.

Marae Unurau (Fig. 10, and Pl. XXI, A and B) stands on rising ground near the western extremity of the southern coast and was visited four times. It was found planted with coffee trees which were purchased, and the ground both inside and in the immediate exterior of the main enclosure was thoroughly cleared. The minor structures and adjoining ground were not cleared.

The palisade surrounding Area A is complete; the count of stones being as follows:—

—	Vertical.	Horizontal.	Total.
North side... 	14	8	23
South side... 	6	12	18
West end	1	4	5
East end	3 + one supplementary.	1	5

Some of the largest stones measure as below (when the stone is still standing the height given is that above ground):—

On north side: vertical, 7 ft. 5 in. × 6 ft. 3 in. × 2 ft. 3 in.

On west end: horizontal, 12 ft. 6 in. × 5 ft. × 2 ft. 9 in.

On east end : horizontal, 12 ft. 3 in. \times 4 ft. 6 in. \times 2 ft. 8 in.

On east end : vertical, 8 ft. \times 5 ft. 9 in. \times 2 ft. 6 in.

The smaller stones are about 5 ft. in height.

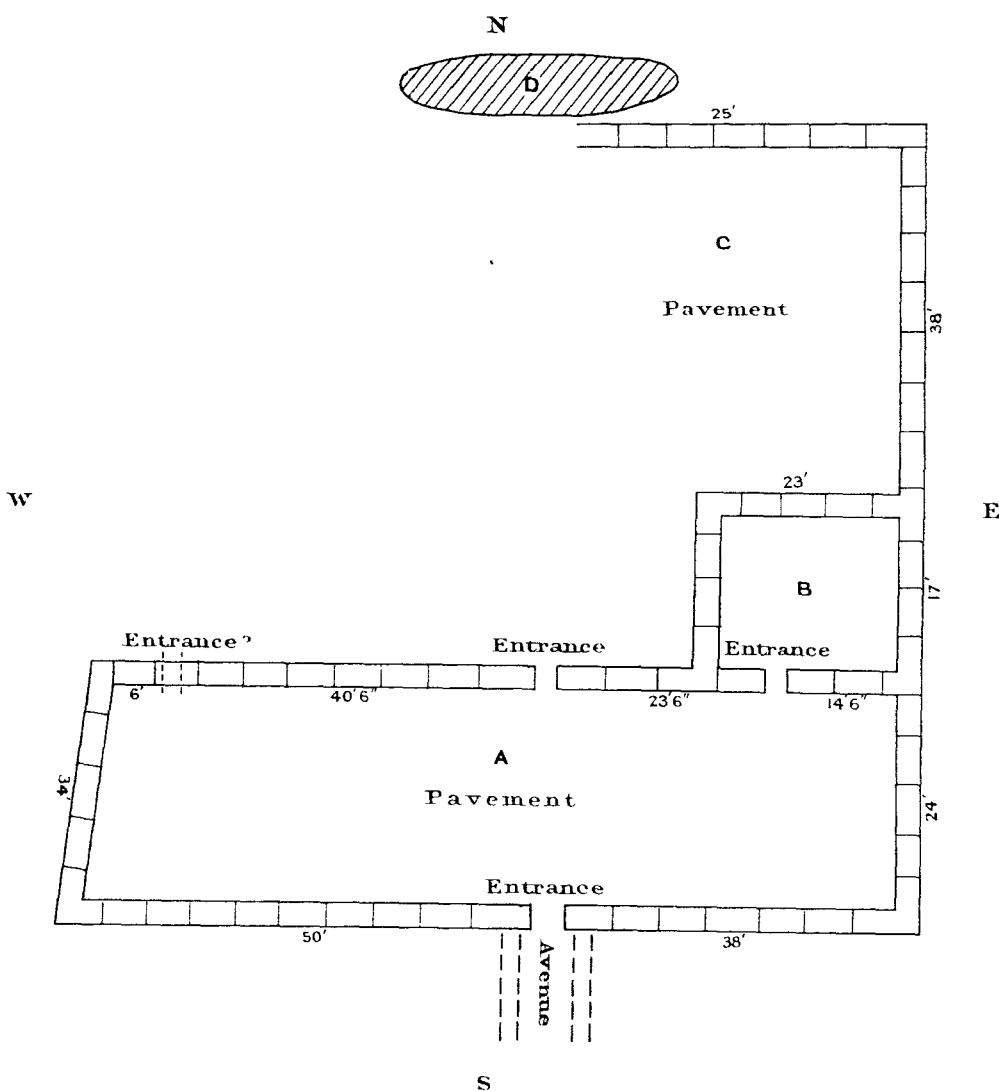


FIG. 10.—MARAЕ UNURAU, RAIJAVAЕ.

There is one entrance on the southern, and two (perhaps three) on the northern side. The whole seems to have been surrounded with a coping of red tuff, and neat doorsteps are made of the same (Fig. 13, A).

Area B, which is entered from A, is surrounded by stones much smaller in size and possibly not contiguous to one another.

Area C is outlined at present on the north and east sides by a few odd stones only, and no definite boundary was found on the west side ; the area is, however, paved.

Area D is a raised terrace or foundation, on which are lying certain wrought stones of red tuff.

A long and complete processional road extends from the south entrance of the marae to the sea, a distance of about 117 yards, coinciding nearly the whole way with the present coast road. The slabs on either side seem originally to have been set up with a space between them of 2 ft. to 3 ft., the interval being filled by a bar of red tuff. Near the marae, where the road is least disturbed, a curb of tuff is found in addition running behind the slabs (Fig. 13, B). The stones near the marae, where they are smallest, average about 2 ft. 6 in. in height; nearer the sea they measure 3 ft. to 5 ft. The breadth of the road at its higher end is 7 ft., near the sea 9 ft. 8 in.; it has been paved throughout (Pl. XXI, B).

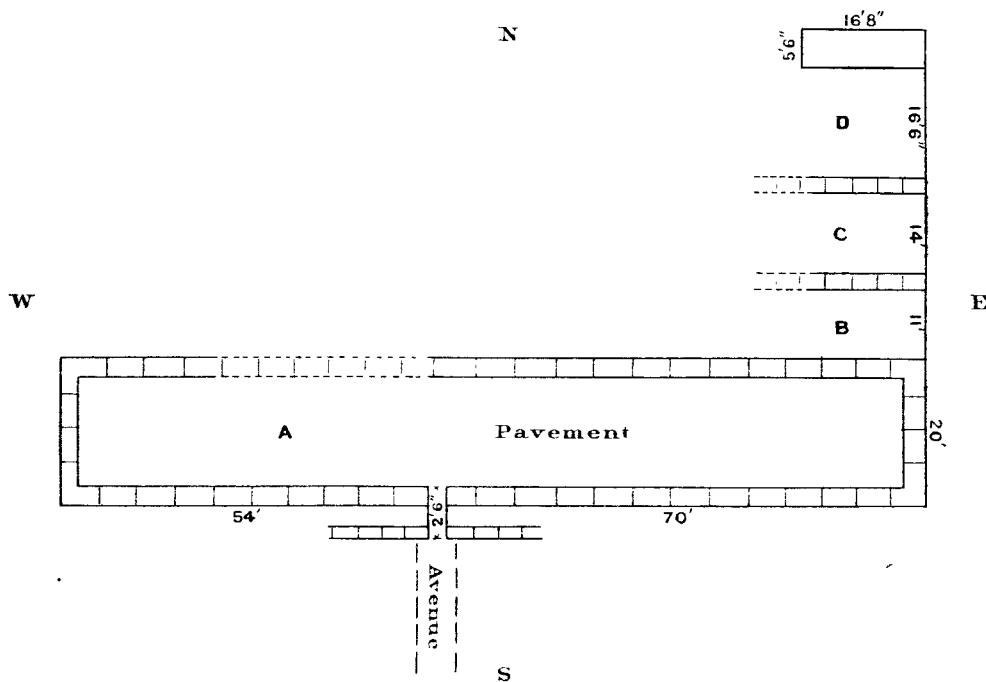


FIG. 11.—MAREE POMOARAU, RAIAVAЕ.

Close to the foot of the avenue, below present high-water mark, are certain foundations, and among them is the base of a small image, the trunk of which lies near by. About 10 yards from the east side of the road and 70 ft. from the sea is found a block of red tuff, weighing about half a ton: on one side of it has been cut a long and narrow seat, the back is surmounted by a carved human head (Fig. 13, D).

A small enclosure of slabs on the west side of the road and some 15 yards from the marae was not examined.

Marae Pomoarau (Fig. 11) is on the south-east coast about 50 yards from the sea. The main enclosure A was the longest seen, having a total length of 126 ft. 6 in., but the western portion of the northern wall is almost entirely missing. The average

height of the remaining stones was about 5 ft., but one on the east side of the southern entrance measured 8 ft. 3 in. \times 3 ft. 8 in. \times 2 ft. 1 in. The monolith in the centre, already mentioned, has a height of 6 ft. 5 in.

An entrance at the north-east end of Area A leads into Area B. Here the ground rises sharply and is somewhat thickly wooded, but the north and east sides of two courts, C and D, were found, rising one above the other, and separated by small slabs. At the top of D are perfect foundations of red tuff blocks, of the dimensions of a house, the upper side of the central block being wrought into a point (Fig. 13, c).

The south entrance to Area A opens on to an avenue which can be traced to the sea ; it is 3 ft. wide, paved, and has slabs at intervals. On either side of this principal entrance, and at 18 inches from it, is a low secondary palisade which extends for 12 ft. on either hand, parallel to the main wall. It is composed of small slabs alternating with blocks of tuff, and in each case there is set, near the termination, the base of a small image (Fig. 13, g).

A larger image lies some yards away, which is said to have been removed from the main court. It is 3 ft. 3 in. in height, exclusive of a triangular pedestal, which was apparently set into the ground. The last feature was also noted elsewhere (Fig. 13, f). It is much worn and the features are indistinguishable.

Marae Titiura (Fig. 12) is mainly remarkable for the small spaces already mentioned, partitioned off each side of the door. The sea side is banked up and paved and kept in place by parallel curbs made of small stones or of cut coral, no tuff has been used. Beyond the north-east corner are two parallel rows of slabs which were not accounted for.

Stone Statues of considerable size were found at Raivavae. Two images, known as "Moanaheiata" (no individual names could be found), stand in a copse about 400 yards from the landing place (Pl. XXII, A). One is a female, the other presumably a male figure. The former statue, which faces due north, is 7 ft. 3 in. in height, in addition to which it rests on a small pedestal ; the girth round the body is 9 ft. 8 in. The male figure, which is not quite so accurately oriented,¹ is buried to the ankles and surrounded by a few stones : the height above ground is 6 ft. 6 in., and the extreme girth 7 ft. 10 in.

The statues form at present no part of any structure, but there are remains of a platform and marae about 20 yards away, from which, it is possible, they may have been removed. Those images are within 150 yards of the main church of the island, which presumably is the one where, according to Ellis, the idols were turned into seats or benches, and it is extraordinary that they should have escaped demolition. This church has now been wrecked by a hurricane, but no remains were obvious among the débris.

Another statue lies about a hundred yards from the village, to the sea side of the main track. Its greatest height is 4 ft. 10 in. : its most interesting feature is a

¹ On its back is painted, "1898 Papeete erexit Lalang."

flattened boss over the occiput, raised $1\frac{3}{4}$ in. above the surface and 7 in. in diameter. The same feature was noticed on the head carved on the sedilla near Marae Pomoarau.

Near Marae Purepo, in the centre of the island, were found fragments of four or five small squatting figures, originally about 2 ft. high. All save one have had legs, and all are now headless; one separate head was discovered. The back of one bore an interesting design (Fig. 13, e). The larger statue at Marae Pomoarau has been mentioned. With the exception of the small bases at the same place no statues were

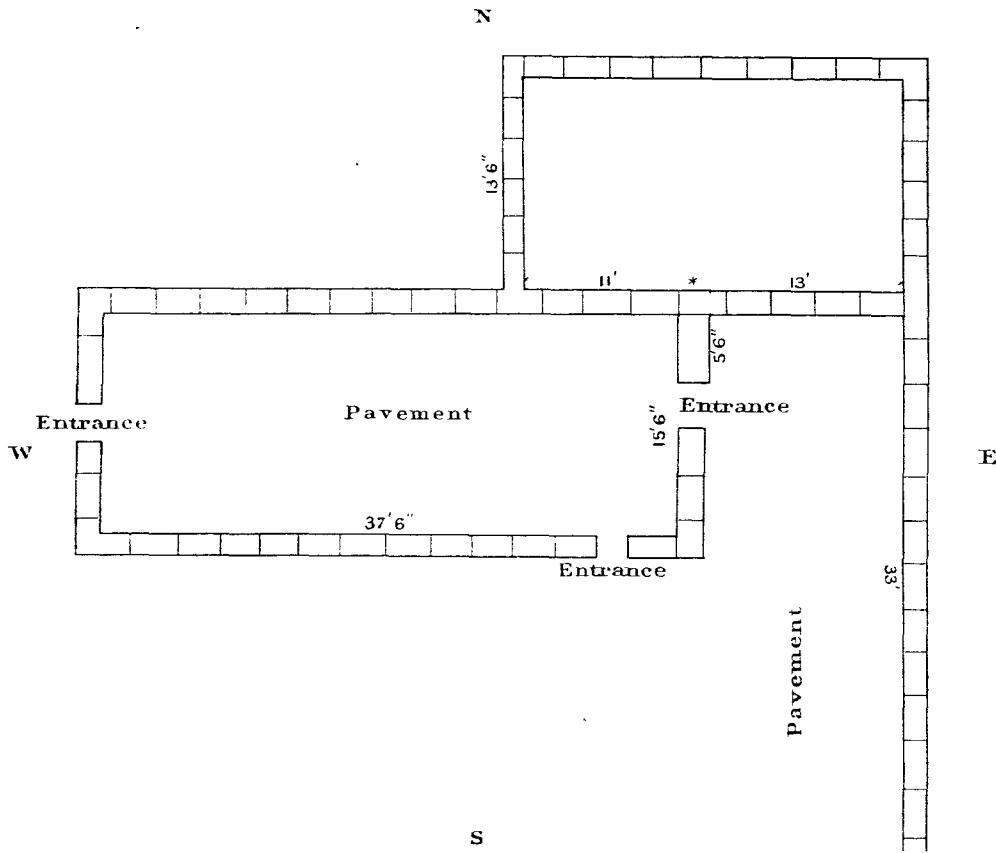


FIG. 12.—MAREAE TITIURA, RAIJAVAEE.

found in the marae, though Ellis states that, in his time, one temple had no less than twenty large stone figures.

Folklore was outside our sphere in the time at our command; but, so far as we could gather, here, as elsewhere in the group, little or nothing is left in the way of knowledge of the past.

Two geographical names at Raivavae were, however, noted with some interest. One island with two remarkable peaks, said to be the work of "the devil," is called "Hotu Atua," recalling "Hotu Matua" of Easter Island legend; while one of the principal peaks is known as "Hiro," who was god of the sky there, and was worshipped on its highest mountain.

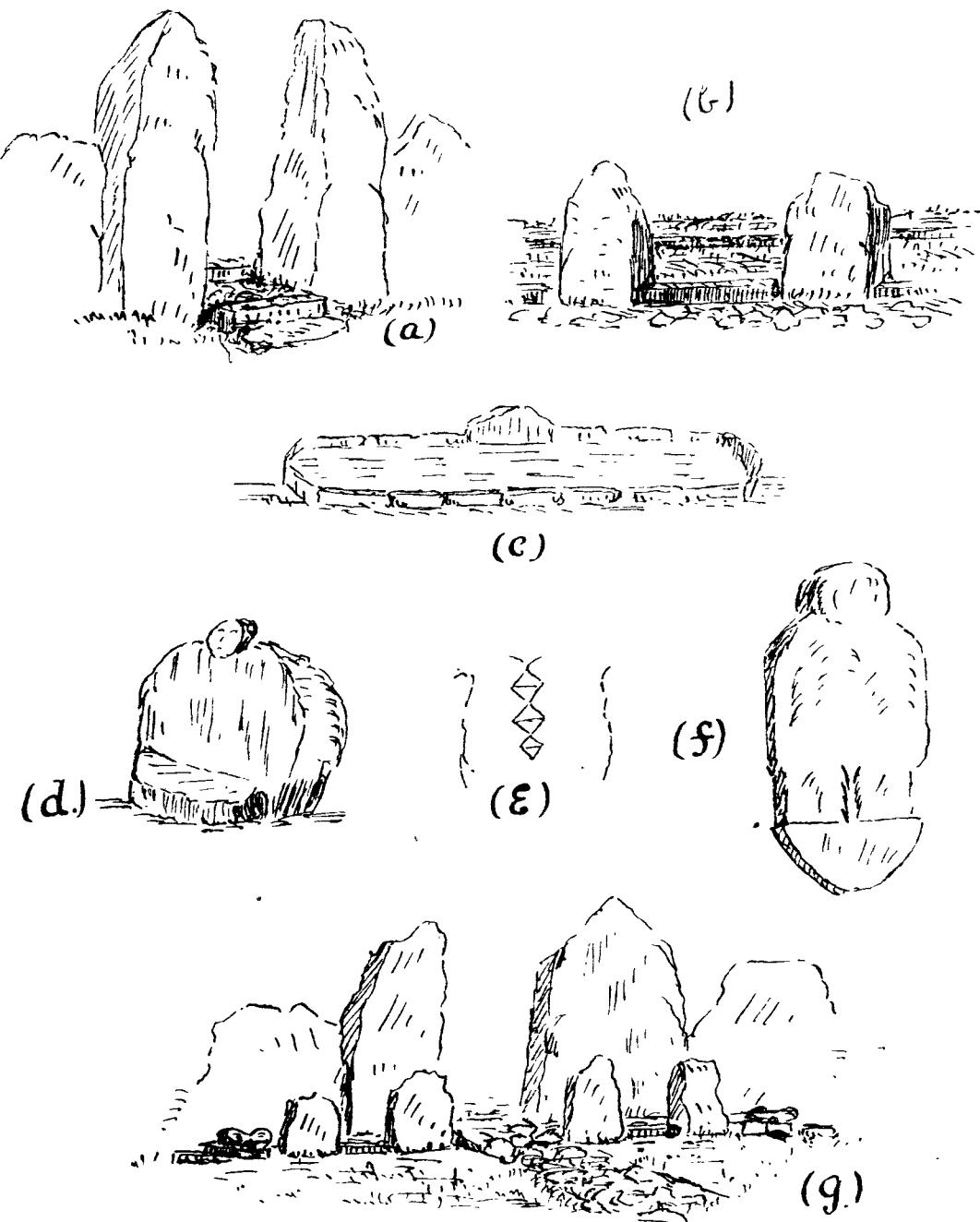


FIG. 13.—JOTTINGS (FROM MEMORY AND A ROUGH NOTE-BOOK).

- (a) Marae Unurau, entrance, interior aspect.
- (b) Marae Unurau, part of avenue of approach.
- (c) Wrought stones in proximity to Marae Pomoarau, believed to be foundations of a house.
- (d) Wrought stone near Marae Unurau, believed to be a seat.
- (e) Design on back of small image at Marae Purepo.
- (f) Image near Marae Pomoarau, showing triangular base.
- (g) Entrance to Marae Pomoarau, exterior.

The statues of Raivavae, the only place in the Austral Group where such were found, resemble those of Easter Island in being made of stone and having the hands in front of the body. Save, however, for these elementary facts, they bear no relationship either in conception, design, or workmanship to those on that island. The marae of the Austral Islands are also, as will have been seen, wholly dissimilar, both from their fellows in the Society Group and from the *Ahu* of Easter Island.

It is satisfactory to know that the Austral Group is among those claiming the attention of the scientific mission from the Bishop Museum of Honolulu, and the material at the disposal of the latter will render their report of great interest.

RAPA-ITI.

Rapa lies nearly 200 miles south-east of Raivavae, and forms a prolongation of the Austral Islands; its shape, however, is unique. It is a high, round island, indented by bays, the whole of whose centre is occupied by an arm of the sea known as the Bay of Ahurei. It consists, therefore, of a chain of mountains, circular save for the opening on the eastern side, and of its radiating spurs. We lay in the central bay for ten days—September 25th to October 5th—but work and photography were somewhat hindered by the wet weather, which is characteristic of the place.

No marae or ceremonial structure of any kind was seen by us. That name is given to three monoliths which stand on the main bay, one at high-, and two at low-water mark, which, it seems most probable, were boundary stones, or had reference to the fish ponds, which are numerous. We could gain information with regard to one building only, termed a marae, which was in one of the exterior bays we were unable to visit. It was said to be an insignificant enclosure, perhaps 20 ft. square, surrounded by a low wall about 2 ft. 6 in. in height, and having at one end a semi-circular platform of the same height. It is debatable whether the present inhabitants of Rapa really know what constitutes a marae.

The interest of the island lies in the works (*palé*),¹ which crown the summits of the mountains, and which it was hoped might bear some possible relation to the *Ahu* of Easter Island (Pl. XXIV). There seems, however, no doubt that they are simply what tradition claims—the strongholds of different sections of the community. These works are found on practically every available height: some twenty were counted by us, but more exist. Eight, which seemed typical and which stood at an elevation varying from 840 ft. to nearly 1200 ft., were visited by our party, and the following deductions are drawn from them.

The rock is sedimentary volcanic, of various degrees of hardness, and the forts are in some cases little more than excavated terraces, of the nature of pure earthworks, but usually the natural summit of the hill has been turned into a round tower or keep. In such cases, the rock is sometimes utilized with no addition, or only a small amount of walling, but where this is not adequate the core has been faced, as in the one shown (Pls. XXII, B, and XXIII, B), with a dry masonry of basaltic fragments,

¹ Two *palé* bear the same name of Pukutakétaké.

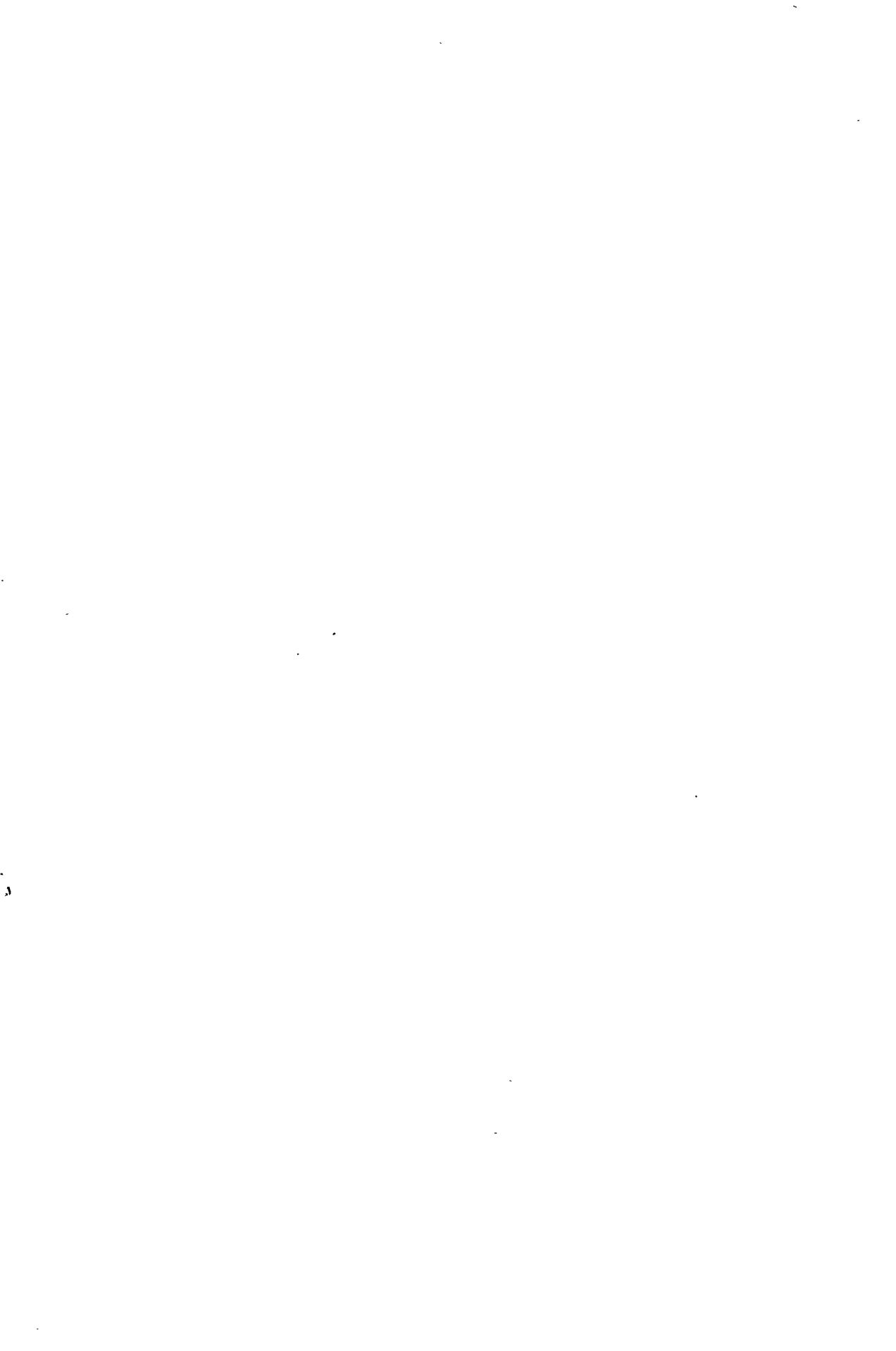


A.—MAREE UMAREA, MOOREA, FROM THE SOUTH.



B.—MAREE TOOARAI, MAHAIATEA, TAHITI ; WITH INSET SHOWING REMAINING SECTION OF WALL.

NOTES ON SOME ARCHÆOLOGICAL REMAINS IN THE SOCIETY AND AUSTRAL ISLANDS.





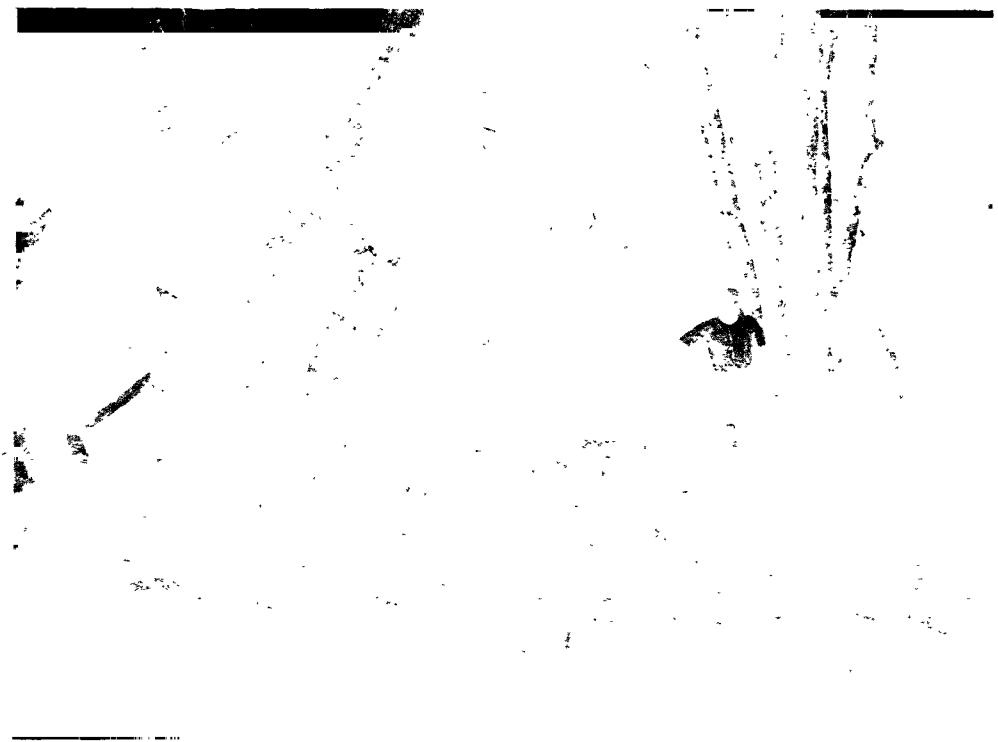
MARAE TOOARAI, MAHAIAEA, TAHITI.

(From *A Missionary Voyage in the Ship "Duff,"* 1796-98.)

NOTES ON SOME ARCHAEOLOGICAL REMAINS IN THE SOCIETY AND AUSTRAL ISLANDS.



A.—THE MARAE, TUBUAI, WEST SIDE.



B.—MARAE AT HARE, TUBUAI: INTERIOR, SHOWING N.W. CORNER AND REMAINS OF PAVEMENT.

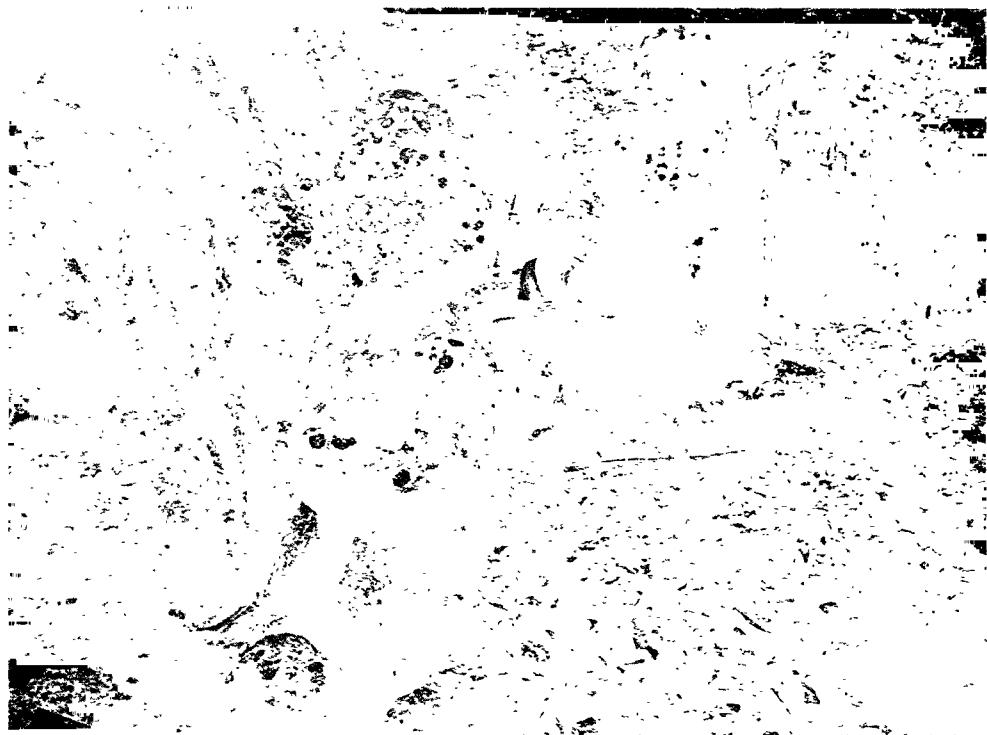




A.—MAREAE UNURAU, RAIKAVAE; INTERIOR, SHOWING N.E. CORNER AND
ENTRANCE ON N. SIDE.



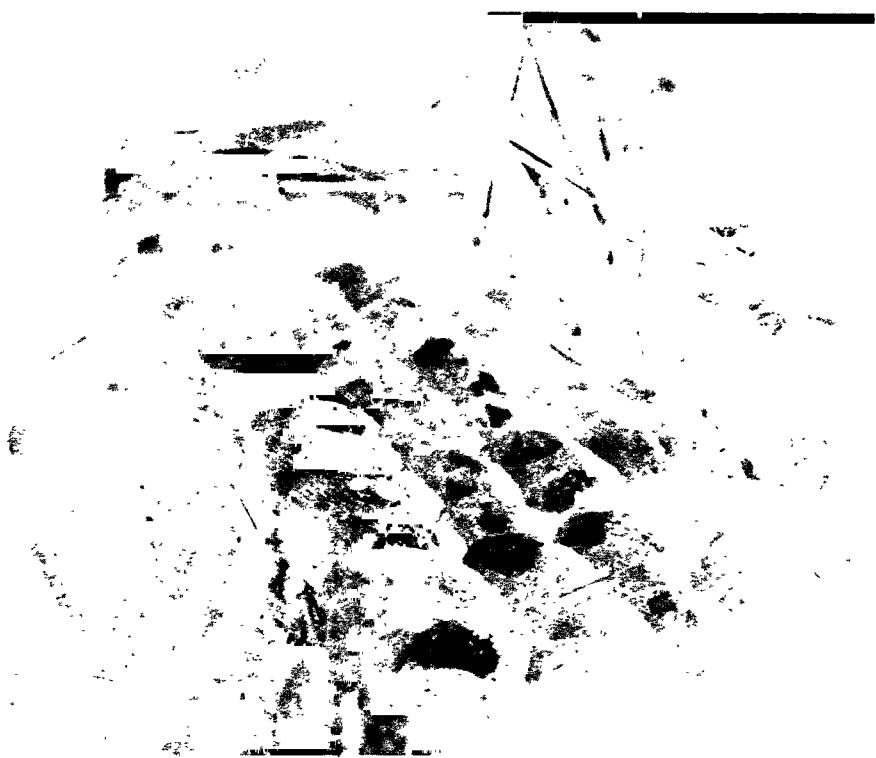
B.—MAREAE UNURAU, RAIKAVAE; AVENUE OF APPROACH,
LOOKING SOUTH.



A.—STATUES, MOANAHEIATA, RAIIVAVAE.



B.—FORT OF PUKUTAKÉ-TAKÉ (EAST), RAPA-ITI, FROM THE NORTH, SHOWING DEFENSIVE DITCH.



A.—MARAЕ HORORA, MOOREA ; SECTION OF BOUNDARY WALL.
(LENGTH OF KNIFE, 1 FT. 9 IN.)



B.—FORT OF PUKUTAKÉ-TAKI (EAST), RAPA-TITI, FROM THE SOUTH.



RAPA-ITI, LOOKING NORTH-WEST; TO SHOW THE POSITIONS OF THE FORTS. IN THE FOREGROUND IS THE FORT OF TEVAITAU AND THE BAY OF AHUREI.

NOTES ON SOME ARCHAEOLOGICAL REMAINS IN THE SOCIETY AND AUSTRAL ISLANDS.



the height of these towers being perhaps 6 ft. to 12 ft. or 14 ft., but in all cases they are solid, and never contain apartments.

Below this tower, the hill-side has been wrought into a number of terraces or platforms at different levels, following the contour of the ground. Steep declivities have been rendered vertical, either simply by quarrying, or by building a facing wall and filling it with loose material, or by both methods. The upper surface of the area thus obtained has been levelled, and sometimes edged by a low breastwork. All platforms, except the highest, have thus their vertical sides, whose drop may range from 8 ft. to 20 ft., while the fourth side consists of a wall which is one of the faces of its neighbouring terrace at a higher level. The result is a number of platforms, standing one below the other in various directions, and of all shapes and sizes. On one side of a fort, at least six of these tiers were counted. The more vulnerable aspect of the stronghold is sometimes defended by a ditch : a col may thus be cut through, leaving only a narrow portion to act as a bridge. The whole amount of ground covered by one of these forts was judged to vary from one to three acres.

It is an interesting question how far these works were the villages or permanent residences of the people who lived by the cultivation of the lower ground. On one of the passes, in addition to the levelled ground frequently found in such places, were certain stone enclosures, apparently connected with dwellings, and also a sunken area which may have been roofed in ; but on the terraces of the forts there were never found buildings, nor foundations of buildings, nor even subterranean shelters worthy the name ; the only depression in the ground had evidently been excavated for purposes of cooking. Huts made of grass only would, no doubt, have disappeared, but would be peculiarly unsuitable for so exposed a position. It seems most probable that the forts were designed only to serve as a refuge for the inhabitants of the valley below in case of sudden raid or emergency. They could be held for a considerable time against an enemy far superior in number, but precluded by circumstances from carrying out a protracted siege.

The only work on Easter Island remotely resembling the forts of Rapa is the terraced hill on the east side of Anakena Bay (see *Mystery of Easter Island*, Fig. 97).

We had intended to remain and work on Rapa, but came to the conclusion that, under the circumstances, it would serve no very useful purpose. We were also influenced in arriving at this decision by the fact that Mr. and Mrs. Stokes, of the Bishop Museum, Honolulu, had already been on Rapa four months, doing most thorough work, not only archaeologically, but also among the few inhabitants, in anthropological measurement and folklore : the latter was, they stated, disappointing. They most kindly put all assistance at our disposal and offered to surrender the field if we cared to remain, but it seemed wiser to continue our way to Mangareva, which legend connects with Easter Island and which has not as yet been investigated.

MANGAREVA, GAMBIER ISLANDS,

November 2nd, 1921.

MISCELLANEA.

PROCEEDINGS OF THE ROYAL ANTHROPOLOGICAL INSTITUTE, 1921.

January 25th, 1921.

Annual General Meeting. (See p. 1.)

January 11th, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Professor F. G. PARSONS, Vice-President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following Ordinary Fellows of the Institute was announced : Mr. Arthur Grimble, Mr. S. R. Lothrop, Mr. G. Newbold, Dr. Rushton Parker, and Mr. F. E. Williams.

Professor C. G. SELIGMAN read his paper on "The Older Palæolithic Age in Egypt," illustrated by specimens and lantern slides.

The paper was discussed by Mr. REGINALD SMITH, Mr. BURKITT, Dr. FLEURE, Mr. PEAKE, Mr. WARREN, and Professor SELIGMAN replied.

The hearty thanks of the meeting were accorded to Professor SELIGMAN for his interesting paper.

February 8th, 1921.

Special Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

Professor KEITH delivered his lecture on "Tailed Men," illustrated by specimens and lantern slides.

The paper was discussed by the PRESIDENT, Professor ELLIOT SMITH, Dr. RUSHTON PARKER, Mr. BRIERLEY and Dr. STANNUS, and Professor KEITH replied.

The hearty thanks of the meeting were accorded to Professor KEITH for his very interesting and important paper, and the Institute adjourned till February 22nd.

February 22nd, 1921.

Ordinary Meeting, held in the Lecture Room, Royal Society, Burlington House. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of Mr. Miles Burkitt as an Ordinary Fellow of the Institute was announced.

Sir ALFRED DAVIES, K.B.E., read his paper describing the scheme of the Welsh Department of the Board of Education for the Collection of Rural Lore in Wales through schools.

The scheme was discussed by the PRESIDENT, Dr. FLEURE, Lord LYTTON, Mr. PEAKE, Mr. VICTOR BRANFORD and Professor FINDLAY of New York, and Sir ALFRED DAVIES replied to the various questions.

The hearty thanks of the meeting were accorded to Sir ALFRED DAVIES and the other speakers, and the Institute adjourned till March 8th.

March 8th, 1921.

Special Meeting, held at 50, Great Russell Street. Dr. F. C. SHRUBSALL in the chair.

The minutes of the last meeting were read and confirmed.

Professor F. G. PARSONS read his paper on "The Head Form of the Long Barrow Races with reference to the Modern Inhabitants of London," illustrated by lantern slides.

The paper was discussed by Dr. SHRUBSALL and Dr. SPOKES, and Professor PARSONS replied.

The thanks of the meeting were accorded to Professor PARSONS for his interesting paper, and the Institute adjourned till March 15th.

March 15th, 1921.

Special Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

Mr. E. TORDAY read his paper on "Culture and Environment: Cultural Differences among the Various Branches of the Batetela," illustrated by lantern slides.

The paper was discussed by the PRESIDENT, Captain JOYCE, Professor ELLIOT SMITH and Dr. STANNUS, and Mr. TORDAY replied.

A hearty vote of thanks was accorded to the lecturer, and the Institute adjourned till March 22nd.

March 22nd, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following Ordinary Fellows of the Institute was announced : Mr. T. H. Andrew, Mr. W. A. Child, Mr. F. Le Gros Clark, Mr. V. J. Crequer, Mr. F. H. Crossley, Mr. G. S. Fort, Dr. Ernest Jones, Dr. Charles Singer, Mr. C. D. Martyn, Professor P. Mitra, Mr. J. Schwartz, and Professor J. T. Wilson.

Dr. F. G. CROOKSHANK read his paper on "The Significance of Mongolian Imbecility," illustrated by lantern slides.

The paper was discussed by the PRESIDENT, Professor KEITH, Dr. LANGDON DOWN, Dr. SHRUBSALL, Professor ELLIOT SMITH and Dr. ANNANDALE, and Dr. CROOKSHANK replied.

A hearty vote of thanks was accorded to Dr. CROOKSHANK for his interesting paper, and the Institute adjourned till April 19th.

April 19th, 1921.

Special Meeting, held at 50, Great Russell Street. Mr. PEAKE in the chair.

The minutes of the last meeting were read and confirmed.

Mr. S. HAZZLEDINE WARREN read his report on the Excavations at Graig-lwyd in 1920, illustrated by lantern slides and specimens.

The paper was discussed by Professor Sir WILLIAM BOYD DAWKINS, Mr. HAWARD and Mr. PEAKE, and Mr. WARREN replied.

A hearty vote of thanks was accorded to Mr. WARREN for his interesting and important paper, and the Institute adjourned till April 26th.

April 26th, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following Ordinary Fellows of the Institute was announced : Hon. Chas. Dundas, Mr. C. Bryner Jones, Dr. G. H. Lawson, Mr. R. N. Salaman, Mr. R. U. Sayce, Mr. A. Hammond Smith, and Miss F. de Clere Vanderkiste.

Mr. A. GRIMBLE read his paper on "From Birth to Death in the Gilbert Islands," illustrated by lantern slides and specimens.

The paper was discussed by Dr. RIVERS, Professor ELLIOT SMITH and Captain FULLER, and Mr. GRIMBLE replied.

The hearty thanks of the meeting were accorded to Mr. GRIMBLE for his valuable and interesting paper, and the Institute adjourned till May 3rd.

May 3rd, 1921.

Special Meeting, held in the Lecture Room, The Royal Society, Burlington House. Professor A. KEITH, Past-President, in the chair.

The minutes of the last meeting were read and confirmed.

Mr. J. REID MOIR read his paper on "An Early Chellean Palæolithic Workshop-site in the Pliocene Forest-Bed of Cromer, Norfolk," illustrated by specimens and lantern slides.

The paper was discussed by Professor KEITH, Professor Sir W. DAWKINS, Sir EDWIN RAY LANKESTER, Mr. WARREN, Mr. HAWARD and Mr. BARNES.

A hearty vote of thanks was accorded to Mr. REID MOIR for his interesting paper, and the Institute adjourned till May 31st.

May 31st, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following Ordinary Fellows of the Institute was announced : Mr. J. P. T. Burchell, Major R. F. D. Burnett, Mr. L. A. Flint, Mr. E. G. Harmer, Mr. L. D. A. Hussey, Mr. J. St. Maur Ramsden, Dr. R. E. Mortimer Wheeler.

Professor H. J. ROSE read his paper on "Celestial and Terrestrial Orientation of the Dead."

The paper was discussed by the PRESIDENT, Professor ELLIOT SMITH, Mr. PEAKE and Mr. GARFITT, and Professor ROSE replied.

A hearty vote of thanks was accorded to Professor ROSE for his paper, and the Institute adjourned till June 21st.

June 21st, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

The Rev. J. ROSCOE read his paper on "The Milk Customs of Bunyoro," illustrated by lantern slides.

The paper was discussed by the PRESIDENT, Professor Sir ARTHUR KEITH, Captain JOYCE, Mr. LOUIS CLARKE, Mr. BRAUNHOLTZ, and the Rev. Roscoe replied.

The hearty thanks of the meeting was accorded to the Rev. Roscoe for his valuable paper, and the Institute adjourned till June 28th.

June 28th, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Professor F. G. PARSONS, Vice-President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced : Mr. W. H. Barker, Mr. C. E. P. Brooks, Mr. M. M. Burnshaw, Rev. J. H. Edgar,

Mr. Alexander Farquharson, Mr. R. V. Favell, Major F. R. Griggs, Colonel T. C. Hodson, Mr. W. H. Ingrams, Mr. W. W. Jervis, Mr. L. S. Palmer, Miss Bertha Phillpots, Mr. F. G. Spear, and the Spelæological Society of the University of Bristol as an Affiliated Society.

Mr. L. H. DUDLEY BUXTON, M.A., read his paper on "The Ancient and Modern Inhabitants of Malta," illustrated by lantern slides.

The paper was discussed by Professor PARSONS, Mr. PEAKE, Dr. SHRUBSALL, Mr. PARKYN and Mr. GARFITT.

A hearty vote of thanks was accorded to Mr. BUXTON for his valuable and interesting paper, and the Institute adjourned until the next session.

October 11th, 1921.

Special Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and accepted.

The PRESIDENT announced the resignation of the TREASURER, Mr. R. W. WILLIAMSON, and the appointment of Dr. SHRUBSALL as his successor.

The PRESIDENT then left the chair, which was taken by Professor F. G. PARSONS, Vice-President.

The PRESIDENT read his paper on "Melanesian Land Tenure."

The paper was discussed by Mr. PEAKE, Rev. E. SMITH, Miss PULLEN BURY, Mr. BRAUNHOLTZ, Mr. THOMAS, Colonel HODSON and Miss PHILLPOTS, and the PRESIDENT replied.

A hearty vote of thanks was accorded to the PRESIDENT for his valuable paper, and the Institute adjourned till October 25th.

October 25th, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and accepted.

Mr. T. F. McILWRAITH read his paper on "The Influence of Egypt on African Death Ceremonies," illustrated by lantern slides.

The paper was discussed by the PRESIDENT, Miss MURRAY, Professor ELLIOT SMITH, Mr. PEAKE, Mr. TORDAY, Dr. STANNUS, Captain FULLER, Mr. ALLEN UPWARD and Mr. BRAUNHOLTZ, and the lecturer replied.

The hearty thanks of the meeting were accorded to Mr. McILWRAITH for his paper, and the Institute adjourned till November 8th.

November 8th, 1921.

Special Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The meeting being a special one, there was no business to transact.

Professor ELLIOT SMITH delivered his lecture on "The Mound Builders of Dunstable," illustrated by lantern slides, the introduction to the lecture having been made by Captain GUY CROWDEN.

The lecture was discussed by the PRESIDENT, Mr. PEAKE, Mr. MILLS, Colonel HODSON, Mr. GARFITT, Mr. SEFTON JONES and Mr. STRONG, and Professor ELLIOT SMITH replied to the various points raised.

A hearty vote of thanks was accorded to Captain CROWDEN and Professor ELLIOT SMITH for their valuable lecture, and the Institute adjourned till November 15th.

November 15th, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced : Mr. H. Batsford, Miss B. M. Blackwood, Mr. Bertram Brooke, Mr. A. B. Griffith Colpoys, Dr. Daniel Colquhoun, Mr. Walter Cook, Mr. de Barrie Crawshay, Miss R. M. Fleming, Mr. E. E. Gomersall, Mr. D. M. Gleig, Mrs. Margaret Hasluck, Mr. W. H. Howes, Mr. C. St. John Ives, Mr. R. H. Kinvig, Mr. W. E. Leveson, Mr. R. F. B. Mackay, Mr. G. Marin, Mr. W. G. Moore, Mr. G. Morris, Mr. Andrew Nell, Professor P. E. Newberry, Mr. F. W. Robertson, Mr. D. G. Tomblings, Colonel J. C. B. Statham, and Dr. A. Wolf.

Miss M. A. MURRAY read her paper on "The Recent Excavations in Malta," illustrated by lantern slides.

The paper was discussed by Sir ARTHUR EVANS, Mr. PEAKE, and Miss MURRAY answered various questions.

A hearty vote of thanks was accorded to Miss MURRAY for her interesting paper, and the Institute adjourned till November 22nd.

November 22nd, 1921.

Special Meeting, held at 50, Great Russell Street. Dr. W. H. R. RIVERS, President, in the chair.

The meeting being a special one, there was no business to transact.

Professor ELLIOT SMITH gave a short demonstration on the Rhodesian skull, with lantern slides.

Mrs. NUTTALL read her paper on "The Recent Archaeological Discoveries in Mexico," illustrated by lantern slides.

The lecture was discussed by Dr. MAUDSLAY, Captain JOYCE and Professor ELLIOT SMITH, and Mrs. NUTTALL replied.

A hearty vote of thanks was accorded to Mrs. NUTTALL for a most interesting paper, and the Institute adjourned till November 23rd.

November 23rd, 1921.

Special Meeting, held at the Lecture Room, Royal Society. Dr. W. H. R. RIVERS, President, in the chair.

The meeting being a special one, there was no business to transact.

Professor CECIL H. DESCH read his paper on "The Place of the Humanities in Scientific Training."

The paper was discussed by Dr. SINGER, Sir RICHARD GREGORY, Professor COKER, Mr. FARQUHARSON, Mr. PEAKE, Colonel HODSON, Dr. HAYWARD and the PRESIDENT.

A hearty vote of thanks was accorded to Professor DESCH for his valuable paper, and the Institute adjourned till November 29th.

December 13th, 1921.

Ordinary Meeting, held at 50, Great Russell Street. Mr. S. H. RAY, Vice-President, in the chair.

The minutes of the last meeting were read and confirmed.

The election of the following as Ordinary Fellows of the Institute was announced : Mr. Henry Field, Dr. Peter Giles, Captain E. C. Hopkinson, Mr. R. Latimer, Mr. L. McLellan Mann, Rev. Professor W. A. Norton, Mr. G. C. Scott, Major the Hon. F. R. Somerset, Mr. O. G. Williams.

Mr. N. W. THOMAS read his paper on "The Week in West Africa."

The paper was discussed by Dr. RUSHTON PARKER and Captain ROBERTSON, and Mr. THOMAS replied.

The thanks of the meeting were accorded to Mr. THOMAS, and the Institute adjourned till January 10th, 1922.

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NOTE.—The Numbers in ordinary type refer to the pages ; the numbers in Clarendon type are the reference numbers of MAN, 1921 ; where necessary the page references to MAN are added in brackets. Except when otherwise indicated, entries which refer to reviews are shown in italics. For a full list of reviews refer to the CONTENTS of MAN. For collected references, see especially *Africa*, *Archaeology*, *Great Britain*, *Physical Anthropology*, *Stone Age*, *Technology*.

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1882 Baye, Baron de, 58 *Avenue de la Grande Armée, Paris.* (*)

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1910 Beech, M. W. H., Esq., M.A., c/o Hon. Terence Bourke, *Chateau Ben Negro, Bizerte, Tunis.*

1913 Berry, James, Esq., M.S., 21 *Wimpole Street, W. 1.*

1914 Bingham, Professor Hiram, 787 *Prospect Street, New Haven, Conn., U.S.A.*

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1920 Blackman, Miss W. S., 34 *Bardwell Road, Oxford.*

1921 Blackwood, Miss Beatrice, *Department of Human Anatomy, University Museum, Oxford.*

1909 Blagden, Charles Otto, Esq., M.A., 57 *Earl's Court Square, S.W. 5.* (§)

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1896 Blundell, Herbert Weld, Esq., *Brooks's Club, S.W.*

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1872 Bowly, Christopher, Esq., *Siddington House, Cirencester.*

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1906 Edwards, Brig.-General W. F. S., C.B., C.M.G., D.S.O., *Nairobi, Kenya Colony, East African Protectorate.*

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1913 Fenton, Capt. E. G., F.R.C.S.I., *2 Avoca Terrace, Blackrock, Co. Dublin.*
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1908 Fleure, H. J., Esq. D.Sc., Professor of Geography and Anthropology, University
College of Wales, *Hillside, Brynymor Road, Aberystwyth. (¶§)*
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1885 Frazer, Sir James G., D.C.L., LL.D., Litt.D., VICE-PRESIDENT, *1 Brick Court, Middle Temple, E.C. 4. (¶§)*
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1914 Garrad, Barry L., Esq., B.A., *34 Aynhoe Road, W. 14.*
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1881 Garson, John George, Esq., M.D., Foreign Assoc., Anthropol. Soc., Paris ; Corr. Member Anthropol. Soc., Berlin, Moscow, Rome ; *Moorcote, Eversley, Winchfield, Hants.* (¶)

1907 Geddes, Rt. Hon. Sir A. Campbell, K.C.B., M.D., Ch.B., British Ambassador Extraordinary and Plenipotentiary, *Washington*.

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1907 Gibson, A. E. M., Esq., Barrister-at-Law, *Dorunkeh Chambers, Calabar, S. Nigeria*.

1913 Gibson, Sir Herbert, *Bella Vista, Cachari, F.C.S., Buenos Aires*.

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1910 Gruning, E. L., Esq., 18 *Russell Mansions, Great Russell Street, W.C. 1.*

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1889 Haddon, Alfred C., Esq., M.A., Sc.D., F.R.S., M.R.I.A., PAST PRESIDENT (1901-1903), Reader in Ethnology in the University of Cambridge, Assoc. Anthropol. Soc. Paris ; Corr. Mem. Anthropol. Soc. Berlin, Florence Rome and Stockholm, 3 *Cranmer Road, Cambridge.* (*¶§)

1905 Haddon, E. B., Esq., B.A., *Gondokoro, via Khartum.* (¶)

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1913 Hamblly, Wilfrid D., Esq., 172 *Canterbury Road, Leyton, E. 10.*

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1904 Harrison, H. S., Esq., D.Sc., EDITOR, *The Horniman Museum, Forest Hill, S.E.* ;
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1896 Keith, Sir A., M.D., F.R.C.S., LL.D., F.R.S., PAST PRESIDENT (1913–16), Conservator of the Museum, Royal College of Surgeons ; 17 Aubert Park, Highbury, N. 5. (¶§)

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1891 Kitts, Eustace John, Esq., *Dudley Hotel, Hove, Sussex.* (*)

1902 Kloss, Cecil B., Esq., F.Z.S., *Kuala Lumpur, Federated Malay States.*

1914 Knight, Lieut.-Col. C. Morley, D.S.O., *Naval and Military Club, Piccadilly, W. 1.*

1881 Knowles, W. J., Esq., *Flixton Place, Ballymena, Co. Antrim.* (¶)

1915 Laidler, P. W., Esq., L.D.S., *Garies, Namaqualand, Cape Province, S. Africa.*

1918 Lake, Miss Hilda A., *Heage House, Crouch Hill, N. 4.*

1914 Lamb, Miss M. Antonia, 212 South 46th Street, *Philadelphia, Penn., U.S.A.*

1920 Lander, Miss Kathleen F., 69 Albany Street, N.W. 1.

1913 Landtman, Dr. Gunnar, 9 Wladimir Street, *Helsingfors, Finland.* (¶)

1888 Law, Walter W., Esq., *Scarborough, New York, U.S.A.* (*)

1920 Lawford, H. E., Esq., 5 Buckingham Palace Mansions, S.W. 1.

1885 Lawrence, E., Esq., *St. Albans, Chalkwell Gardens, Westcliff-on-Sea.* (*)

1921 Lawson, E. H., Esq., M.D., C.M., 1 Wilmington Square, W.C. 1.

1916 Layard, J. W., Esq., *King's College, Cambridge.*

1904 Lennox, D., Esq., M.D., *Tayside House, 162 Nethergate, Dundee.* (*)

1909 Leveson, H. G. A., Esq., M.R.A.S., F.R.G.S., *East India United Service Club, St. James's Square, S.W. ; 2 Edwardes Place, Kensington Road, W. 8.*

1921 Leveson, W. E., Esq., 10 St. James's Court, *Buckingham Gate, S.W. 1.*

1920 Lloyd, Mrs. C. M., 13 Lovelace Gardens, Surbiton.

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Election.**

- 1920 Lloyd, Bertram, Esq., 53 *Parkhill Road, Hampstead, N.W. 3.*
- 1919 Lloyd, G. T., Esq., I.C.S., c/o *Postmaster, Shillong, Assam.*
- 1914 Loé, Baron Alfred de, Curator of Department of Prehistoric Antiquities, *Musées Royaux du Cinquantenaire, Brussels, Belgium.*
- 1918 Long, Richard C. E., Esq., *Portarlington, Ireland.*
- 1893 Longman, Charles James, Esq., M.A., 27 *Norfolk Square, W. 2.* (*)
- 1920 Longman, H. A., Esq., Director, Queensland Museum, *Brisbane, Australia.*
- 1921 Lothrop, S. K., Esq., 114 *Beacon Street, Boston, Mass., U.S.A.*
- 1920 Lyons, A. P., Esq., *Daru, Papua, via Port Moresby.*
- 1918 Lyttle, Capt. W., *Claremont, Chefoo, China.*

- 1920 Macalister, Robert A. S., Esq., Professor of Celtic Archaeology, University College, Dublin, 18 *Mount Eden Road, Donnybrook, Dublin.*
- 1901 Macé, A., Esq., 14 *Hill Road, St. John's Wood, N.W. 8.*
- 1913 MacGregor, G. Laird, Esq., I.C.S., c/o *Messrs. Grindlay & Co., 54 Parliament Street, S.W. 1.*
- 1919 MacGregor, R. R. I., Esq., *Hamilton High School, Daikato, New Zealand.*
- 1918 MacHugh, Lt.-Col. R. J., 141 *King's Avenue, Clapham Park, S.W. 4.*
- 1899 MacIver, Capt. David Randall-, M.A., D.Sc., F.S.A., F.R.G.S., c/o *Brown, Shipley & Co., 123 Pall Mall, S.W. 1.*
- 1904 Mackay, J., Esq., *Craig-ard, Farcliffe Road, Bradford.*
- 1920 Mackay, J. B. I., Esq., *Abinsi, Munshi Province, Nigeria, via Lokoja.*
- 1921 Mackay, R. F., Esq., *Glencriitten, Oban, Argyle, N.B. : 165 Broadway, New York City.*
- 1910 Mackintosh, J. S., Esq., M.D., 2 *Platt's Lane, Hampstead, N.W. 3.*
- 1908 MacMichael, Capt. H. A., D.S.O., Assistant Chief Secretary, *Khartoum, Sudan.* (¶)
- 1885 MacRitchie, David, Esq., F.S.A. Scot., 4 *Archibald Place, Edinburgh.* (¶)
- 1911 Malcolm, Capt. L. W. G., *Christ's College, Cambridge.*
- 1881 Man, E. H., Esq., C.I.E., *St. Helen's, Preston Park, Brighton.* (¶)
- 1913 Mann, F. W., Esq., *Devonshire Club, St. James's Street, S.W. 1.*
- 1921 Mann, Ludovic McLellan, Esq., 144 *St. Vincent Street, Glasgow.*
- 1896 Marett, R. R., Esq., M.A., D.Sc., Reader in Anthropology in the University of Oxford, *Exeter College, Oxford.* (*¶)
- 1920 Maries, Edward de, Esq., 8 *Harvard Court, West Hampstead.*
- 1905 Marten, R. H., Esq., M.D., 12 *North Terrace, Adelaide, South Australia.*
- 1920 Martindell, Capt. E. W., M.A., *Chelston, Ashford, Middlesex.* (\$)
- 1921 Martyn, Charles D., Esq., *Jesselton, British North Borneo.*
- 1894 Maudslay, A. P., Esq., M.A., D.Sc., F.S.A., F.R.G.S., PAST PRESIDENT (1911-12), *Morney Cross, Hereford.* (¶\$)
- 1912 Maxwell, J. C., Esq., Colonial Secretary, *Sierra Leone.*

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1920 Maynard, Guy, Esq., *The Natural History Museum, High Street, Ipswich.*
1911 McConnell, R. E., Esq., B.A., M.D., Uganda Medical Service, *Arua, Uganda.*
1920 McIlwraith, T. F., Esq., *St. John's College, Cambridge ; Hamilton, Canada.*
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1877 Messer, A. B., Esq., M.D., Inspector-General of Hospitals and Fleet, *Kinclune, Carlisle Road, Eastbourne. (*¶)*
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1908 Milton, J. H., Esq., *Harrison House, College Avenue, Crosby, Liverpool.*
1916 Milward, Graham, Esq., *77 Colmore Row, Birmingham.*
1920 Mindham, W. F., Esq., *Bailey House, Thorne, near Doncaster ; Survey Dept., Kaduna, N. Nigeria.*
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1919 Monckton, Capt. C. A. W., *12 The Beach, Walmer.*
1920 Mond, Miss Mary, *35 Lowndes Square, S.W. 1.*
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1921 Morris, George, Esq., *Bath Club, 34 Dover Street, W. 1.*
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1908 Munro, N. Gordon, Esq., M.D., *147 Bluff, Yokohama.*
1917 Murphy, Miss Margaret C., M.B., *Lady Hardinge Medical College, Delhi.*
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1916 Murray, Miss Margaret A., *University College, Gower Street, W.C. 1. (¶\$)*
1905 Musgrove, J., Esq., M.D., Bute Professor of Anatomy, *The University, St. Andrews, N.B.*
1875 Muspratt, Edmund K., Esq., F.C.S., *5 Windsor Buildings, George Street, Liverpool.*
1896 Myers, Col. C. S., M.A., M.D., *Caius College, Cambridge. (*¶)*
1909 Myers, Henry, Esq., *Ebbisham Lodge, Downs Avenue, Epsom, Surrey.*

Year of
Election.

1893 Myres, J. L., Esq., M.A., F.S.A., F.R.G.S., VICE-PRESIDENT, Wykeham Professor of Ancient History in the University of Oxford, Corr. Member Anthropol. Soc., Paris, 101 Banbury Road, Oxford. (*¶§)

1903 Myres, Miss J. L., c/o Professor J. L. Myres, 101 Banbury Road, Oxford. (*)

1921 Nell, Andreas, Esq., M.R.C.S., Victoria Memorial Eye Hospital, Colombo, Ceylon.

1921 Nevill, G. A., Esq., Balipara, P.O., Assam, India.

1921 Newberry, Percy E., Esq., M.A., O.B.E., Oldbury Place, Ightham, Kent.

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1913 Newhall, D. V., Esq., Rockledge, Yarmouth, Maine, U.S.A.

1898 Newton, Wm. M., Esq., Summerhill Cottage, Dartford, Kent. (¶)

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1910 Noel, Miss Emilia F., 37 Moscow Court, W. 2.

1918 Norman, Walter Henry, Esq., 21 Park Mansions, Bath.

1913 Nuttall, T. E., Esq., M.D., F.G.S., J.P., Middleton, Huncoat, Accrington.

1920 O'Donnell, S. P., Esq., I.C.S., Delhi, India.

1906 Oke, Alfred William, Esq., B.A., LL.M., F.S.A., F.G.S., F.L.S., 32 Denmark Villas, Hove. (*)

1905 Oldman, W. O., Esq., 77 Brixton Hill, S.W. 2.

1913 Outes, Dr. Felix F., Calle Defensa 1171, Buenos Ayres, Argentine Republic.

1909 Page, John William, Esq., 14 Glenhurst Road, Mannamead, Plymouth.

1906 Palmer, Herbert Richmond, Esq., B.A., LL.B., F.R.G.S., Barrister-at-Law, Kirkby Lonsdale, Westmorland; Zungeru, Northern Nigeria. (¶)

1921 Palmer, L. S., Esq., H.M. Signal School, R.N. Barracks, Portsmouth.

1920 Pange, Contesse Jean de, 9 Square de Messine, Paris, 8e.

1919 Panikkar, K. M., Esq., M.A.O. College, Aligarh, S. India.

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1906 Parkyn, E. A., Esq., M.A., 1 Eton Villas, Hampstead, N.W. 3.

1904 Parsons, F. G., Esq., F.R.C.S., VICE-PRESIDENT, Professor of Anatomy, University of London, St. Thomas's Hospital, S.E. 1. (¶§)

1913 Passmore, A. D., Esq., Wood Street, Swindon, Wilts.

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1915 Patterson, W. R., Esq., 70 Stamford Avenue, Preston Park, Brighton; c/o Military Governor, Security Section C, Cologne, Germany.

Year of
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1911 Peake, H. J. E., Esq., *Westbrook House, Newbury, Berks.* (¶§)

1916 Peake, W. B., Esq., *13 Phineas Pett Road, Well Hall, Eltham, Kent.*

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1920 Penzer, N. M., Esq., *Clifton Hill, St. John's Wood, N.W. 8.*

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1921 Phillipotts, Miss Bertha S., *Westfield College, Hampstead, N.W. 3.*

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1910 Phillips, J. Gastrell, Esq., *19 Imperial Square, Cheltenham.*

1916 Phillipson, Rev. J. H., *The Yews, Victoria Road, Tamworth, Staffs.*

1913 Pocock, R. I., Esq., F.R.S., *The Zoological Society's Gardens, Regent's Park, N.W. 1.*

1912 Posnansky, Signor Arthur, *La Paz, Bolivia.*

1919 Prideaux, C. S., Esq., *Ermington, Dorchester.*

1907 Pyecraft, W. P., Esq., A.L.S., *British Museum (Natural History), Cromwell Road, S.W. 7.*

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1909 Quinnell, Roland, Esq., *15 Walpole Road, Brighton.*

1909 Radcliffe-Brown, A. R., Esq., M.A., Professor of Social Anthropology, University of Cape Town, *P.O. Box 594, Cape Town.*

1921 Raglan, Baron, *24 Sloane Gardens, S.W. 1.*

1921 Ramsden, John St. M., Esq., *Bulstrode, Gerrard's Cross, Bucks.*

1868 Ransom, Edwin, Esq., F.R.G.S., *24 Ashburnham Road, Bedford.* (*)

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1875 Read, Sir C. Hercules, Hon. LL.D., F.S.A., F.B.A., PAST-PRESIDENT (1899–1901), (1917–1919), Keeper of British and Mediaeval Antiquities and Ethnography, British Museum ; 6 *Palace Gardens Terrace, Kensington, W. 8.* (¶§)

1886 Reid, Robert William, Esq., M.D., Professor of Anatomy in the University of Aberdeen, 37 *Albyn Place, Aberdeen.* (¶)

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1901 Ridgeway, Sir W., M.A., Sc.D., F.B.A., Hon. LL.D., Hon. Litt.D., PAST-PRESIDENT (1908–10), Disney Professor of Archaeology and Brereton Reader in Classics in the University of Cambridge, Hon. Member Anthropol. Soc. Brussels, Hon. Member Deutsche Gesellschaft für Anthropologie, *Caius College, Cambridge ; Fen Ditton, Cambridge.* (¶§)

1893 Rigg, Herbert, Esq., M.A., K.C., J.P., F.S.A., *Wallhurst Manor, Cowfold, Horsham.*

1920 Ritchie, J. Esq., *The Museum, Perth.*

1920 Ritchie, W. W., Esq., *Postal Commissioner, Harbin, N. China.*

1900 Rivers, W. H. R., Esq., M.D., F.R.S. (PRESIDENT, 1921–), *St. John's College, Cambridge.* (¶§)

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1902 Robinson, H. C., Esq., *Selangor State Museum, Kuala Lumpur, Federated Malay States.* (¶)

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1912 Roscoe, Rev. J., *Ovington Rectory, Watton, Norfolk.*

1901 Rose, H. A., Esq., *Milton House, La Haule, Jersey, Chan. Is.* (¶)

1911 Rose, H. J., Esq., M.A., *University College of Wales, Aberystwyth.*

1882 Roth, Henry Ling, Esq., 95 *Waterloo Crescent, Halifax.* (¶).

1882 Rothschild, Hon. Nathaniel C., *Arundel House, Kensington Palace Gardens, W. 8* (*)

1904 Routledge, W. Scoresby, Esq., M.A., 9 *Cadogan Mansions, Sloane Square, S.W. 1.* (¶)

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1905 Salaman, C., Esq., *Treborough Lodge, Roadwater, Somerset.*

1919 Salaman, M. H., Esq., *Wadlington, Lodsworth, Sussex.*

1921 Salaman, Redcliffe N., Esq., *Homestall, Barley, Royston, Herts.*

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1919 Sanderson, G. M., Esq., M.R.C.S., c/o P.M.O., Zomba, Nyasaland ; Broxbourne, Parkstone, Dorset.

1886 Sarawak, H.H., the Dowager Ranee of, Grey Friars, Ascot.

1876 Sayce, Rev. A. H., M.A., LL.D., Professor of Assyriology in the University of Oxford, Queen's College, Oxford. (*¶)

1921 Sayce, R. Urwick, Esq., Natal University College, Pietermaritzburg, Natal.

1921 Schwartz, John, Esq., Broomwood, Sevenoaks, Kent.

1921 Scott, G. C., Esq., B.A., S.P.S., El Fasher, Sudan.

1900 Seligman, Charles G., Esq., M.D., F.R.S., Professor of Ethnology, University of London, Court Leys, Toot Baldon, Oxford. (¶)

1885 Seton-Karr, H. W., Esq., 8 St. Paul's Mansions, Hammersmith. (¶)

1908 Shakespear, Col. J., C.M.G., C.I.E., D.S.O., 14 Alexandra Court, Maida Vale, W. 9. (¶)

1898 Shrubsall, Frank Charles, Esq., M.A., M.D., TREASURER, 15 Well Walk, Hampstead, N.W. 2. (*¶)

1919 Simmons, G. Alan, Esq., M.R.C.S., L.R.C.P., Edgecombe, Newbury, Berks.

1921 Singer, Chas., Esq., M.D., F.R.C.P., 5 North Grove, Highgate, N. 6 (*)

1901 Skeat, W. W., Esq., M.A., 17 Coombe Road, Croydon. (¶)

1918 Smallwood, G. W., Esq., Selwood, St. Austell, Cornwall.

1909 Smith, Rev. E. W., 2 Maison Dieu Road, Dover.

1910 Smith, G. Elliot, Esq., M.A., Litt.D., M.D., F.R.S., Professor of Anatomy in the University of London (University College), Hon. Member Anthropol. Soc. Paris, Munich, Rome ; University College, Gower Street, W.C. 1 (¶)

1907 Smith, Col. W. Ramsay, D.Sc., M.D., C.M., F.R.S. (Edin.), Permanent Head, Health Department, Belair, South Australia.

1905 Smurthwaite, T. E., Esq., 134 Mortimer Road, Kensal Rise, N.W. 10.

1910 Sollas, W. J., Esq., M.A., Sc.D., LL.D., F.R.S., Professor of Geology in the University of Oxford, 173 Woodstock Road, Oxford. (¶)

1893 Somerville, Rear-Admiral Boyle, T., C.M.G., R.N., 30 Markham Square, Chelsea, S.W. 3. (¶)

1921 Spear, F. Gordon, Esq., M.A., Christ's College, Cambridge ; Esher House, Bath.

1913 Spence, Lewis, Esq., 12 Blackford Avenue, Edinburgh.

1909 Spencer, Lieut.-Col. L. D., Egyptian Army, Wau, Khartoum, Sudan ; Army and Navy Club, Pall Mall, S.W. 1. (*)

1919 Spokes, P. Sidney, Esq., J.P., M.R.C.S., 4 Portland Place, W. 1.

1920 Sprott, N. A., Esq., c/o H.E.H. The Nizam's State Railway, Secunderabad, India.

1908 Stannus, H. S., Esq., M.D., 57 Russell Square, W.C. 1.

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1913 Stefánsson, V., Esq., *American Geographical Society, Broadway, at 156th Street, New York City.*

1880 Stephens, Henry Charles, Esq., F.L.S., F.G.S., F.C.S., *Cholderton, Salisbury.* (*)

1913 Stolyhwo, Dr. K., *Pracownia Antropologiczna ; Warsaw ul Kaliksta 8, Poland.*

1921 Statham, Col. John, C.B., C.M.G., C.B.E., *Caledonian United Service Club, Edinburgh.*

1883 Streeter, E. W., Esq., F.R.G.S., F.Z.S., 49 *Compayne Gardens, Hampstead, N.W. 6.* (*)

1903 Strong, W. M., Esq., M.A., B.C., *Port Moresby, Papua, via Australia.* (¶)

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1915 Tagart, E. S. B., Esq., *Livingstone, Northern Rhodesia, via Cape Town.*

1905 Talbot, P. A., Esq., *The Residency, Benin, Nigeria.* (¶)

1906 Tata, Sir D. J., c/o *Jeremiah Lyon and Co., 8 Paternoster Row, E.C. 4* (*)

1918 Taylor, Edward Reginald, Esq., *Norfolk House, Norfolk Street, Strand, W.C.2.* (*)

1915 Taylor, Leslie F., Esq., 2A *Shan Road, Rangoon, Burma.*

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1904 Thomas, N. W., Esq., M.A., Corr. Mem. Soc. d'Anthrop. Paris ; Corr. Member Comité des Études historiques et scientifiques de l'Afrique de l'Ouest, *Wood Villa, Racecourse, Oswestry.* (*¶)

1884 Thomas, Oldfield, Esq., F.R.S., F.Z.S., 15 *St. Petersburg Place, Bayswater Hill, W.* (*¶)

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1890 Thomson, Arthur, Esq., M.A., M.B., Professor of Human Anatomy in the University of Oxford, *The Museum, Oxford.* (¶)

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1911 Thurston, Edgar, Esq., C.I.E., *Cumberland Lodge, Kew, Surrey.*

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1912 Vickers, Douglas, Esq., Chapel House, Charles Street, Mayfair, W. 1.

1915 Vines, T. H., Esq., M.A., Sind Madressah, Karachi, India.

1911 Vischer, Major Hans, Charlwood Park, Charlwood, Surrey.

1902 Visick, H. C., Esq., M.D., 35 Rosslyn Hill, Hampstead, N.W. 3.

1891 Waddell, Lt.-Col. L. A., C.B., C.I.E., LL.D., 5 Tanza Road, Hampstead, N.W. 3. (*¶)

1901 Waddington, S., Esq., B.A., 15 Cambridge Street, Hyde Park, W. 2.

1905 Walker, Basil Woodd, Esq., M.D., 6 Dawson Place, Pembridge Square, W. 2.

1920 Walker, W. Seymour, Esq., Maidan-I-Naftun, Ahwaz, S. Persia.

1912 Waller, Rev. C. L., Southwold, Suffolk.

1919 Wallis, B. C., Esq., 18 Nassau Street, W. 1.

1922 Ward, Edwin, Esq., F.S.A. (Scot.), Keeper of Art and Ethnographical Department, Royal Scottish Museum, Edinburgh.

1902 Warren, S. Hazzledine, Esq., F.G.S., Sherwood, Loughton, Essex. (¶§)

1913 Watkins, Lieut.-Col. O. F., Native Affairs Dept., Nairobi, East Africa.

1907 Welch, H. J., Esq., 9 Homefield Road, Bromley, Kent.

1907 Wellcome, Henry S., Snow Hill Buildings, Holborn, E.C. 1.

1912 Wells, S., Esq., 32 Oakholme Road, Sheffield.

1905 Westermarck, E., Esq., Ph.D., Andragatan 15A, Abo, Finland ; Woodman's Cottage, Boxhill, Dorking.

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1922 Wethered, F. J., Esq., M.D., Pencaer, Melville Road, Falmouth.

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1922 White, Cecil, Esq., 23 Drummond Place, Edinburgh.

1907 White, James Martin, Esq., 1 Cumberland Place, Regent's Park, N.W. 1.

1921 Williams, F. E., Esq., High Street, Unley Park, S. Australia.

1910 Williams, S. H., Esq., L.D.S., R.C.S. (Eng.), F.S.A., 32 Warrior Square, St. Leonards-on-Sea.

1909 Williamson, R. W., Esq., M.Sc.; The Copse, Brook, near Witley, Surrey. (¶§)

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1921 Wolf, A., Esq., M.A., D.Litt., Professor of Philosophy, University College, *12 Kewferry Road, Northwood, Middlesex.*

1920 Wollaston, A. F. R., Esq., M.R.C.S., L.R.C.P., *King's College, Cambridge; The Savile Club, 107 Piccadilly, W. 1.* (*)

1916 Woodford, Capt. C. E. M., *Bowshot's Farm, West Grinstead, Sussex.*

1909 Wright, A. R., Esq., *H.M.'s Patent Office, Southampton Buildings, W.C. 2.*

1911 Wright, Rev. F. G., *Kingscote, King's Street, Chester.*

1918 Wright, H. Newcome, Esq., LL.D., *St. Austell, Cornwall.*

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AFFILIATED SOCIETIES [under By-Law IX].

1915 Brighton Public Library, Museums and Fine Art Galleries, *Brighton.*

1921 Spelæological Society, *University of Bristol.*

1900 The Oxford University Anthropological Society, c/o *R. R. Marett, Esq., M.A., Exeter College, Oxford.*

1912 The London School of Economics, *Clare Market, W.C.*

SOCIETIES, ETC., EXCHANGING PUBLICATIONS
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ROYAL ANTHROPOLOGICAL INSTITUTE.

GREAT BRITAIN AND IRELAND.

<i>Dublin</i> ...Royal Dublin Society.	<i>London</i> ...India Office, Whitehall.
— Royal Irish Academy.	— Japan Society.
— Royal Society of Antiquaries.	— Nature.
<i>Edinburgh</i> ...Royal Scottish Geographical Society.	— Palestine Exploration Fund.
— Royal Society of Edinburgh.	— Quatuor Coronati Lodge, No. 2076.
— Society of Antiquaries of Scotland.	— Royal Archaeological Institute.
<i>Glasgow</i> ...Philosophical Society.	— Royal Asiatic Society.
<i>Liverpool</i> ... University Institute of Archæology.	— Royal Colonial Institute.
<i>London</i> ...African Society.	— Royal Geographical Society.
— British Medical Association.	— Royal Society.
— British Psychological Society.	— Royal Society of Literature.
— Egypt Exploration Society.	— Royal Statistical Society.
— Folklore Society.	— Royal United Service Institution.
— Geologists' Association.	— Science Progress.
— Hellenic Society.	— Society of Antiquaries.
— Subject Index to Periodicals.	<i>Taunton</i> ... The Somersetshire Archæological Society.
	<i>Truro</i> ...Royal Institution of Cornwall.

EUROPE.

AUSTRIA-HUNGARY.	
<i>Agram</i> ...Kroäatische Archäologische Gesellschaft.	<i>Brussels</i> ...Société d'Anthropologie de Bruxelles.
<i>Budapest</i> ... Magyar Tudomnájos Akadémia.	— Société d'Archéologie de Bruxelles.
— Magyar Nemzeti Néprajzi Ostálya.	DENMARK.
<i>Cracow</i> ...Akademija Umiejetnósci.	<i>Copenhagen</i> ...Société des Antiquaires du Nord.
<i>Sarajevo</i> ...Landesmuseum (Wissenschaftliche Mittheilungen aus Bosnien).	FRANCE.
<i>Vienna</i> ...Anthropologische Gesellschaft.	<i>Lyon</i> ...Société d'Anthropologie de Lyon.
— K. Akademie der Wissenschaften.	<i>Paris</i> ...L'Anthropologie.
BELGIUM.	
<i>Brussels</i> ...Académie Royale des Sciences.	— École d'Anthropologie.
— Collection de Monographies Ethnographiques.	— Institut de Paleontologie, Humaine.
— Instituts Solvay.	— Revue de l'Histoire des Religions.
	— Soc. de Geographie.
	— Soc. des Americanistes.
	— Société d'Anthropologie.
	— Année Sociologique.

GERMANY.

Berlin...Berliner Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
— K. Museum für Völkerkunde.
Brunswick...Zentralblatt für Anthropologie, etc.
Cologne...Rautenstrauch-Joest-Museum.
Giessen...Hessische Blätter.
Gotha...Petermanns Mitteilungen.
Halle-a-d-Saale...Kaiserliche Leopoldina Carolina Akademie der Deutschen Naturforscher.
— Deutsche Morgenländische Gesellschaft.
Kiel...Anthropologischer Verein für Schleswig-Holstein.
Leipzig ... Archiv für Religionswissenschaft.
— Archiv für Rassen und Gesellschaft Biologie.
— Verein für Erdkunde.
— Orientalisches Archiv.
Munich ... Deutsche Gesellschaft für Anthropologie, Ethnologie, und Urgeschichte.
Stuttgart...Zeitschrift für Morphologie und Anthropologie.

GREECE.

Athens...Ephemeris Archaologikè.
— Annual of the British School of Archaeology.

ITALY.

Florence...Società Italiana di Antropologia, Etnologia, e Psicologia Comparata.
Rome...Accademia dei Lincei.
— Società Romana di Antropologia.
Turin...Archivio di Psichiatria.

NETHERLANDS.

Amsterdam...Koninklijke Akademie van Wetenschappen.

CAPE COLONY.

Cape Town...Royal Society of South Africa.
Transvaal, Johannesburg ... The South African Institute for Medical Research.

Amsterdam...Publications of the Koloniaal Instituut, Amsterdam.

Leiden ... Internationales Archiv für Ethnographie.

The Hague...Koninklijk Instituut voor de Taal-, Land-, en Volkenkunde van Nederlandsch Indië.

NORWAY.

Bergen...Bergens Museum.

POLAND.

Warsaw...Bulletin Archeologique Polonais.

RUSSIA.

Dorpat...Publications of the University.

Helsingfors...Suomen Muinaismuistoyhdistyksen Arkakauskirja (Journal of the Finnish Archæological Society).

Moscow...Imper. Obshchestvo Lubitelei Iestestvoznania, Antropologii, i Etnografii.

Petrograd...Imper. Akademia Nauk.

SPAIN.

Madrid...Junta Superior de Excavaciones y Antigüedades.

Madrid...Junta para Ampliacion de Estudios e Investigaciones Cientificas.

San Sebastian...Sociedad de Estudios Vascos.

SWEDEN.

Stockholm ... Academy of Antiquities, National Museum.

— Nordiska Museet.

— Ymer.

Uppsala...La Bibliothèque, l'Université Royale.

SWITZERLAND.

Neuchâtel ... Soc. Neuchateloise de Géographie.

Zurich...Musée National Suisse.

AFRICA.

Egypt.

Cairo...Société Sultanieh de Géographie.

Giza...Archæological Survey of Nubia.

Khartum...Wellcome Laboratory Reports.

AMERICA.

ARGENTINE.

La Plata...Museum.

BRAZIL.

Rio de Janeiro....Museu Nacional.

CANADA.

Ottawa...Royal Society of Canada.

Toronto...Canadian Institute.

ECUADOR.

Quito...Academia Nacional de Historia.

UNITED STATES.

Berkeley, Cal...University of California.

Cambridge, Mass. ... Peabody Museum, Science.

Chicago...Field Museum.

Ithaca, New York...American Journal of Psychology.

Lancaster, Pa. ... American Folklore Society.

New York...American Museum of Natural History.

— Columbia University.

Philadelphia...University Museum.

Washington...American Anthropologist.

— American Journal of Physical Anthropology.

— Bureau of Ethnology.

— Smithsonian Institution.

— United States Geological Survey.

— United States National Museum.

ASIA.

CHINA.

Shanghai...Royal Asiatic Society (China branch).

INDIA.

Anuradhapura, Ceylon ... Archaeological Survey.

Bombay...Anthropological Society.

— Indian Antiquary.

— Royal Asiatic Society.

Calcutta...Bengal Asiatic Society.

— The University.

Colombo...Royal Asiatic Society (Ceylon branch).

Ranchi...Bihar and Orissa Research Society.

Rangoon...Burma Research Society.

Simla...Archaeological Reports.

JAPAN.

Tokio...Asiatic Society of Japan.

— Tokio-Daigaku (Imperial University).

JAVA.

Batavia...Bataviaasche Genootschap van Kunsten en Wetenschappen.

SIAM.

Bangkok...National Library.

Straits Settlements.

Singapore...Royal Asiatic Society (Straits Branch).

AUSTRALIA AND PACIFIC.

Honolulu ... Bernice Pauahi Bishop Museum.

Melbourne...Royal Society of Victoria.

New Plymouth, N.Z....Polynesian Society

Sydney...Australian Museum.

Sydney...Australasian Association for the Advancement of Science.

— Royal Society of New South Wales.

Wellington, N.Z....New Zealand Institute.

— Dominion Museum.

EXCHANGES FOR "MAN."

ENGLAND.

- Hull*...The Naturalist.
- Liverpool*...Journal of the Gypsy Lore Society.
- London*...British Association.
- Church Missionary Review.
- Eugenics Review.
- Journal of the East India Association.
- Lancet.
- School of Oriental Studies.
- Science Progress.
- Sociological Review.
- South American Missionary Society.

ARGENTINE.

- La Plata*...Museum.

AUSTRIA-HUNGARY.

- Budapest*...Magyar Nemzeti Museum.
- Kolozsvár*...Dolgozatok.
- Lwow (Lemberg)*...Ludu.
- Mödling*...Anthropos.
- Uh. Hradisko*...Pravék.

BELGIUM.

- Brussels*...Bulletin de la Société d'Etudes Coloniales.
- Bull. de la Soc. Géographie.
- Instituts Solvay.
- La Revue Congolaise.
- Missions Belges.

DENMARK.

- Copenhagen*...Meddelelser om Danmark Antropologie.

FRANCE.

- Dax*...Société de Borda.
- Paris*...Institut de Paleontologie Humaine.
- Journal de Psychologie.
- L'Anthropologie.
- La Geographie.
- La Nature.
- La Revue Préhistorique.
- L'Ethnographie.

Paris...L'Homme Préhistorique.

- Revue d'Ethnographie et des Traditions Populaires.
- Société Préhistorique Française.
- Statistique Générale de la France.

GERMANY.

- Danzig*...West Preussisches Provincial-Museum.
- Dresden*...Bericht des Vereins für Erdkunde.
- Frankfurt a/M*...Völker-Museum.
- Giessen*...Hessische Blätter.
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- Guben*...Niederlausitzer Mitteilungen.
- Hamburg*...Museum für Völkerkunde.
- Kiel*...Mitteilungen des Anthropologischen Vereins in Schleswig-Holstein.
- Munich*...Correspondenzblatt.
- Geographische Gesellschaft.
- Prähistorische Blätter.
- Nürnberg* ... Bericht der Natur-historischen Gesellschaft.

INDIA.

- Calcutta*...The University.
- Simla*...Archæological Reports.
- Lahore*...Punjab Historical Society.
- Poona*...Bhandarkar Oriental Research Institute.
- Ranchi*...Man in India.

ITALY.

- Como*...Rivista Archeologica della Provincia de Como.
- Rome*...Rivista Italiana di Sociologia.
- Reale Societa Geografica Italiana.
- Milan*...Scientia.

NETHERLANDS.

- Amsterdam*...Nederlandsch Indie, Oud und Nieuw.
- Leiden*...Rijks Museum van Oudheden.

NORWAY.

- Trondhjem*...K. Norske Videnskabers Selskab.
- Rome*...Rassegna di Studi Sessuali.

PORtUGAL.

Lisbon...Archeologo Português.
— Archivo de Anatomia e Anthro-pologia.
Porto...Sociedade Portuguesa de Antro-pologia e Etnologia.

RHODESIA.

Bulawayo...Proceedings of the Rhodesian Scientific Association.

SPAIN.

Barcelona...Estudis I. Materials.
San Sebastian...Sociedad de Estudios Vascos.

SWEDEN.

Uppsala...La Bibliotheque, L'université Royale.

SWITZERLAND.

Basel...Natursforschenden Gesellschaft.
Zürich...Schweizerisches Archiv für Volkskunde.
— Jahresbericht der Schweiz-Gesell-schaft für Urgeschichte.
Geneva...L'Institut Suisse d'Anthropo-logie Générale.

AFRICA.

Natal, Pietermaritzburg...Museum.
Egypt, Khartoum...Sudan Notes and Re-cords.

ECUADOR.

Quito...Academia Nacional de Historia.

MEXICO.

Mexico...Ethnos.

PERU.

Lima...Revista del Archivo Nacional del Peru.

UNITED STATES.

Berkeley, Cal....University.
Boston...American Journal of Archæology.
Chicago...Open Court.
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— Science.
Philadelphia...Proceedings of American Philosophical Society.
Washington ... Bureau of American Ethnology.
Tahiti, Papeete...Bulletinde la Société d'Etudes Océaniennes.

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